

THE *Review of* *Gastroenterology*

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Evolution and Evaluation of an Acceptable Operation for Peptic Ulcer

Problems in Gastric Surgery

The Surgical Aspects of Diverticulitis

Surgery of the Gallbladder

The Clinical Manifestations of Chronic Amebiasis

Eighteenth Annual Convention

The Biltmore Hotel

Los Angeles, Calif., 12, 13, 14 October 1953

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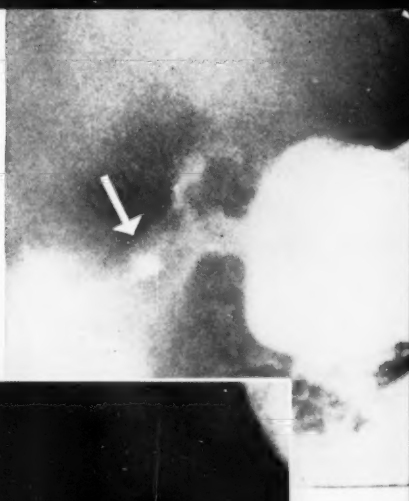
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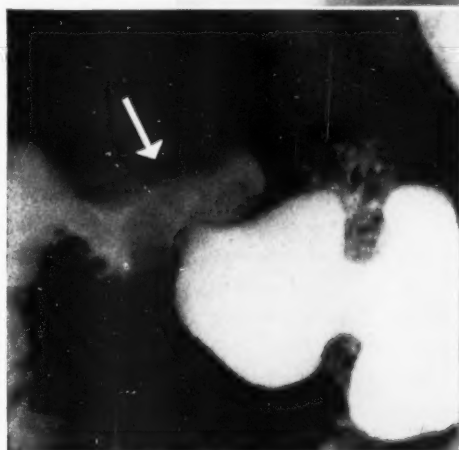
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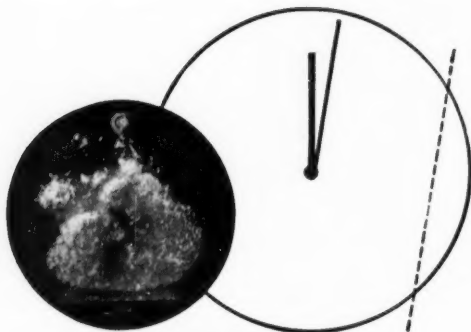
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(INCORPORATING THE AMERICAN JOURNAL OF GASTROENTEROLOGY)

*The Pioneer Journal of Gastroenterology, Proctology
and Allied Subjects in the United States and Canada*

CONVENTION NUMBER

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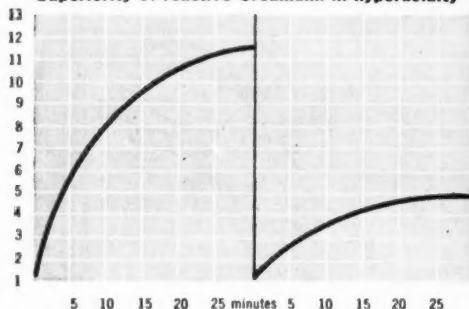
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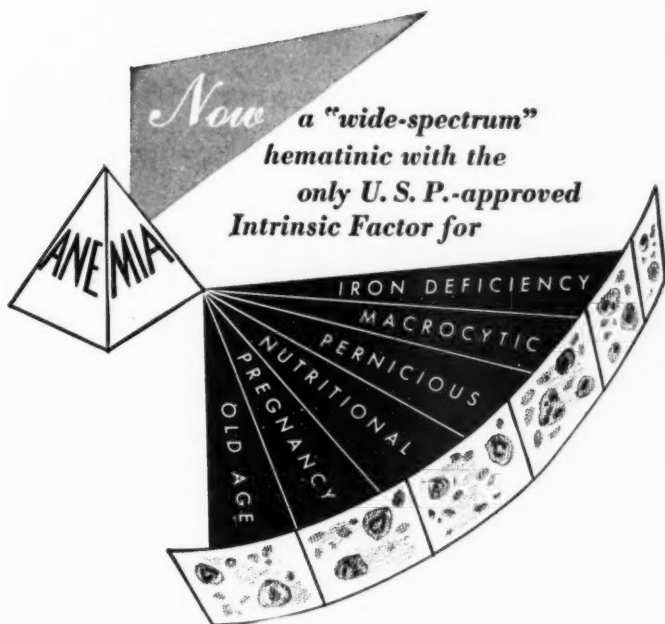
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3. *J. Philippine M. A.* 26:155, 1950

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1. Portis, S. A., and King, J. C.:
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VOLUME 20

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NUMBER 9

EVOLUTION AND EVALUATION OF AN ACCEPTABLE OPERATION FOR PEPTIC ULCER*†

(INCLUDING DESCRIPTION OF THE TECHNIC OF TUBULAR GASTRIC RESECTION
WITH TRANSVERSE GASTROPLASTY, AND EXTRAPLEURAL STERNOTOMY
FOR OPERATIONS IN THE ATTIC OF THE ABDOMEN)

OWEN H. WANGENSTEEN, M.D.‡

Minneapolis, Minn.

PRESENT-DAY OPERATIONS FOR ULCER

The ideal operation for peptic ulcer has not been devised. The resection technics employed in the surgical management of ulcer are out-growths of previous applications of the same procedures to gastric cancer. Enough surgical experience has now been had with the Billroth operations such that, one now can say quite safely: peptic ulcer does respond satisfactorily to an acceptable resection. Moreover, the characters of a satisfactory resection can be defined. Whether done on the Billroth I or the Billroth II principle of operation, the resection must be adequate—a three quarter resection is necessary to protect against recurrent ulcer. And in the Billroth II procedure, antral exclusion, without excision of the pyloroantral mucosa is known to predispose to recurrent ulcer, even though an otherwise satisfactory resection is done. In addition, it is important to employ a short afferent duodenal loop. Failures can be traced quite regularly to defection on one of these scores. Perhaps the most frequent source of recurrent ulcer is failure to carry the point of resection high enough on the

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6. The Watson P. Davidson Fund.

‡Chairman, Department of Surgery, University of Minnesota Medical School, Minneapolis 14, Minnesota.

greater curvature. In adipose ulcer patients, long fed on milk and cream instead of skim milk to the great discomfiture of the surgeon, it is easy to see how inadequate surgical exposure contributes to leaving a larger residual gastric pouch than the surgeon had intended. Each year, I see a few patients in whom ulcer recurrence was owing to this circumstance.

Ulcer recurrence is not, however, the chief source of dissatisfaction with the resection technics currently employed in the surgical management of ulcer; the experience of our clinic in patients followed up to 10 years after an acceptable Billroth II type of operation suggests that the incidence of stomal ulcer is approxi-



Fig. 1—Billroth at the age of 29, when still a pupil of Langenbeck in Berlin. Billroth was 52 years of age at the time of his important success in the first gastric resection. (Reproduced with the permission of the author and publisher; from the fine volume by Professor Leopold Schönbauer¹⁷: *Das Medizinische Wien*.)

mately one per cent¹⁵. The unwanted side-effects, commonly described under that all inclusive but poor descriptive term of "the dumping syndrome", are largely responsible for the lack of enthusiastic endorsement of the conventional gastric resection for peptic ulcer. And, whereas, a few surgeons suggest that only 2 or 3 per cent of patients undergoing gastric resection for peptic ulcer present evidences of the dumping syndrome, the experience of our clinic indicates quite definitely that approximately 20 per cent of all patients undergoing a Billroth

II type of gastric resection for the relief of peptic ulcer have such symptoms as palpitation and sweating after eating, making it necessary occasionally to lie down to secure relief^{13,15}. Intolerance to certain foods and weight loss also are commonplace findings. Were it not for these occurrences, the Billroth I and II



Fig. 2—Eiselsberg¹⁷ in the intimate circle of his pupils (also from Schönbauer's *Das Medizinische Wien*; reproduced with permission of the author and publisher).

Eiselsberg⁷ devised the pyloric exclusion operation. In his initial paper in 1895, he described having performed the procedure primarily for "irremovable" gastric cancer. However, in the same paper, he reported employment of the procedure for difficult pyloro-duodenal ulcers as well.

When Rydygier¹⁶ reported the first gastric resection for benign ulcer (*Klin. Wchnsch.*, 19:39, 1882) the editor of *Centralblatt für Chirurgie* commented in a review of Rydygier's paper, "I hope it will be the last one"¹¹.

Eiselsberg⁶ also was the first to perform the antecolic, antiperistaltic partial terminolateral anastomosis (1889). In this country, the partial terminolateral anastomosis is usually known as the Hofmeister procedure. As far as I can tell, the only description of the procedure was by his pupil Stumpf¹⁹, also of Tübingen (1908)¹⁸.

Finsterer of Vienna, a pupil of Hochenegg, described antral exclusion again in 1918. He suggested that one could excise the antral mucosa, leaving only the pyloro-antral muscular cylinder. It remained, however, for Wilmanns²⁵ of Gadderbaum, Germany, in 1926 to suggest that in the antral exclusion operation, the antral mucosal segment be excised routinely to diminish the unfavorable influence of the gastrin factor.

In 1928, Devine⁴ of Melbourne, Australia, re-described antral exclusion in the surgery of peptic ulcer, leaving a large segment of the acid-secreting area on the isolated distal segment. By 1921, Haberer⁸ had suggested that the recurrence rate with the antral exclusion operation was such that the procedure should be abandoned.

Many technics of effecting antral exclusion with excision of the antral mucosa have been made—one by the present writer²¹ in *Surgery*, 12:5, 731-741, (Nov.), 1942. Rauch¹⁵, in a recent publication—*Surgery*, 32:4, 638-653, (Oct.), 1952 indicates that the recurrence rate following the antral exclusion operation in which the antral mucosa is excised, is no higher than in the conventional gastric resection of the Billroth II variety in which the extent of the gastric resection is the same.

operations could be endorsed enthusiastically as eminently satisfactory operations for the relief of peptic ulcer. To do so in the light of these side-effects of operations would be to recommend something far short of perfection.

Bohmansson¹ of Örebro, Sweden, has had a very large experience with the Billroth I operation for ulcer. Moreover, he has converted a number of Billroth II resections to Billroth I procedures with lessening of the dumping syndrome.* A few such conversions also have been made here, but with little or no suggestion of improvement of the situation.

These are the considerations which have prompted me to continue the search for a more acceptable operation for peptic ulcer. Gastrojejunostomy and pyloroplasty have proved inadequate as curative operations for peptic ulcer—the recurrence rates being far too high. Vagotomy too has proved unsatisfactory because a vagotomized stomach is atonic and fails to empty. Dragstedt⁵ continues to be

TABLE I

VARIATIONS OF THE BILLROTH OPERATIONS

1881—BILLROTH I—Excision of the distal third of the stomach for cancer with direct gastroduodenal anastomosis		
1885—BILLROTH II—Ante-Colic, Isoperistaltic Gastrojejunal Anastomosis		
1887—KRÖNLEIN—Ante-Colic, Anti-Peristaltic Terminolateral Anastomosis		
1889—EISELSBERG—Ante-Colic, Anti-Peristaltic Partial Terminolateral Anastomosis		
1893—ROUX-Y Anastomosis		
1894—BRAUN—REICHAL—POLYA—Retro-Colic, Ante-Peristaltic, Terminolateral Anastomosis		
1894	1908	1911
1895—EISELSBERG—FINSTERER—DEVINE—Gastric Resection with Antral Exclusion		
1895	1918	1928
1897—MIKULICZ—Segmental Resection		
1906—GRASER—HOFMEISTER—Retro-Colic, Anti-Peristaltic, Partial Terminolateral Anastomosis		
1906	1908	
1926—WILMANNS—Antral Exclusion With Excision of the Antral Mucosa		

It has been said that all gastric resections are but variations of the Billroth procedures. In fact, Eiselsberg, distinguished pupil of Billroth, in his day, said of Billroth, in relation to gastric resection; "Billroth built the house; all innovations in gastric resection since then have been but changes in the external facade". This statement obviously is oversimplified. The origins of some commonly employed techniques of gastric resection are shown above.

an ardent advocate of supplementing vagotomy with a gastrojejunostomy. This suggestion has many loyal supporters. That gastrojejunostomy affords inadequate protection against recurrent ulcer is conceded quite generally. And on the experimental side, it would appear that gastrojejunostomy robs vagotomy of a good deal of the protection which it affords against recurrent ulcer—a circumstance which suggests that the protective effect of vagotomy may be owing in large part to prolonged retention of food in the stomach. Only time will tell how

*Wallensten and Göthman of Falun, Sweden, recently have indicated that the dumping syndrome was observed remotely in 10.1 per cent of 334 patients undergoing the Billroth I type of resection for peptic ulcer. (Wallensten, Sten; Göthman, Lars: An Evaluation of the Billroth I Operation for Peptic Ulcer, *Surgery*, 33:1-20, 1953).

effective vagotomy and a complemental drainage operation are. In any case, a good deal of the original widespread enthusiasm for the procedure following the initial publications of Dragstedt and his associates appears to have waned. Fail-



Fig. 3—Mikulicz-Radecki. Mikulicz was one of Billroth's most distinguished pupils. His name is attached to the Heineke-Mikulicz pyloroplasty. However, it was Heineke of Erlangen who did the first successful pyloroplasty in 1886. The report was made up by a medical student—Fronmueller, by name, in a Doctor's Dissertation. Mikulicz' report was in 1888. Mikulicz carried out the operation independently and indicated in a foot note that he had heard of Heineke's success with the procedure. Mikulicz' patient died¹⁸.

It was Mikulicz who introduced segmental resection in 1897, an operation which he quickly abandoned. In the literature, Mikulicz' name also is associated with the operation of exteriorization of the colon for cancer. Here too, however, he also had predecessors, for Bloch of Copenhagen and Paul of Liverpool, each described the procedure in 1892. Mikulicz' report was in 1903.

Mikulicz made a visit to this country in 1904 and returned an ill man to die of cancer of the stomach at the age of 55 in 1905.

ure to ablate the ulcer diathesis, with the appearance of recurrent ulcer, seems to be the Achilles' heel of vagotomy and gastrojejunostomy as well as of vagotomy and excision of the antrum¹².

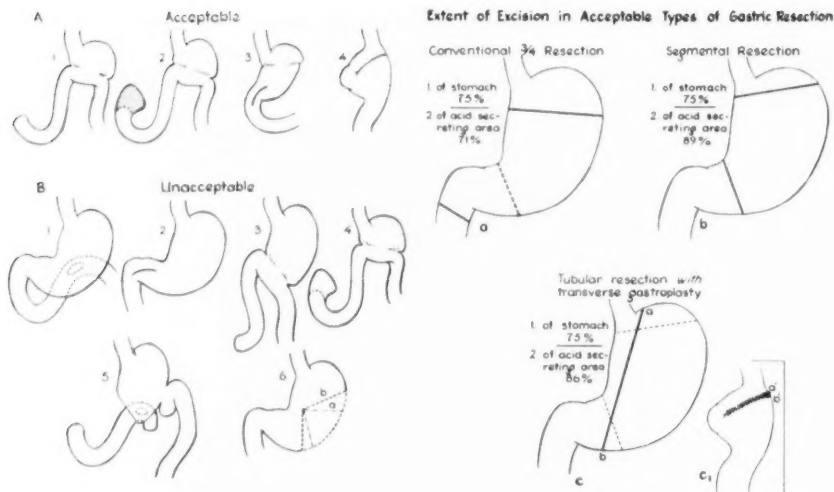


Fig. 4

Fig. 5

Fig. 4—Acceptable and Unacceptable types of Gastric Resection for Peptic Ulcer

A. Acceptable Operations

1. The three-quarter gastric resection, whether performed upon the Billroth I or the Billroth II principles of operation. When the Billroth II procedure is done, the necessity of making a short proximal duodenojejunal loop is obvious.
2. The three-quarter gastric resection, with pyloric exclusion, in which procedure it is necessary, of course, to excise the antral mucosa. It is *antral exclusion*, and not retention, that is, separation of the antrum from the residual gastric pouch which occasions the ulcer provocation of the so-called antral exclusion operation.
3. Segmental Resection. In this procedure, a Heineke-Mikulicz pyloroplasty is mandatory, for the antrum is regularly vagotomized in making a transverse division through the entire width of the stomach. In this clinic, in the performance of segmental resection, it has been customary to leave the greater portion of the antrum and to leave only 10 per cent of the stomach in the retained proximal fragment.
4. Tubular resection with transverse gastropasty. A variant of the present procedure was proposed by the writer in 1940²⁰.

B. Unacceptable Operations

1. Gastrojejunostomy.
2. Pyloroplasty.
3. Conventional Billroth types of gastric resection in which less than 50 per cent of the stomach is removed¹⁰.
4. The conventional Eiselsberg pyloric exclusion operation in which the mucosa is left in the antral fragment^{22,23}.

5. The Schmilinsky procedure, in which provision is made for total intragastric regurgitation. It probably is the most ulcer-abetting of all operations ever recommended for peptic ulcer.
6. Fundusectomy of Connell² in 1929;—when Connell first recommended this procedure, his illustrations suggest that he removed approximately 25 per cent of the total area of the stomach; in 1939³, the excision had been extended to remove 40 per cent of the total area of the stomach. This operation has failed to protect against recurrent peptic ulcer.

Fig. 5.—The extent of Excision of Gastric Tissue in Acceptable Types of Gastric Resection for Peptic Ulcer. (Tracings by my colleague, Dr. F. John Lewis.)

A. *The three-quarter resection for peptic ulcer.*

This operation is adaptable to gastric as well as to duodenal ulcer, and can be carried out on the Billroth I or the Billroth II principle. It has been indicated that the experience of this clinic with the procedure in the relief of idiopathic strictures of the esophagus has been satisfactory. These should be called "acid-peptic strictures of the esophagus". In the accompanying planigraphic tracings, it is to be noted that 71 per cent of the acid-secreting area is excised.

B. *Segmental Resection for Peptic Ulcer.*

This operation is applicable to all peptic ulcers except those of the antrum. It is to be noted that 75 per cent of the surface area is removed while 89 per cent of the acid-secreting area is excised. The antrum being left, it was deemed important to excise a comparatively large area of the acid-secreting area. There have been no recurrent ulcers in 90 patients treated in this manner. Inasmuch as it is antral exclusion or separation and not retention of the antrum that is ulcer provoking, it is likely that a somewhat smaller excision of the acid-secreting area may suffice. A complementary Heineke-Mikulicz pyloroplasty is always mandatory in this procedure.

C. *Tubular Resection.*

This is the operation currently employed in this Clinic for duodenal ulcer. Obviously, it is not applicable to gastric ulcer. The extent of the excision in the acid-secreting area is not quite as large as that in segmental resection. A comparison of illustrations b and c will suggest that, in tubular resection (c) a somewhat longer segment of acid-secreting mucosa is left along the lesser curvature. The vagi are not divided in this procedure. Consequently, a pylorotomy is necessary only in instances where there is narrowing of the duodenum, or in the presence of massive hemorrhage from the duodenum.

Both segmental resection and tubular resection have been employed with satisfaction in the "idiopathic" structures of acid-peptic ulcer. Inasmuch as free gastric drainage is so important in the relief of acid-peptic strictures of the esophagus, a Heineke-Mikulicz pyloroplasty is added, even though pyloric obstruction is not present.

Tubular resection has proved to be an eminently satisfactory operation in the management of duodenal ulcer. Tubular resection protects against the Histamine-in-Beeswax provoked ulcer in the dog⁹.

SEGMENTAL GASTRIC RESECTION

A few years ago, embarked upon the quest of a more suitable operation for duodenal ulcer than the ordinary Billroth II procedure, I revived segmental resection²², which Mikulicz had devised and abandoned as long ago as 1897¹⁴. My skirmishes with that procedure have been related elsewhere. It has proved an eminently satisfactory operation for duodenal ulcer. In 90 patients to whom the procedure was applied, no instances of recurrent ulcer have been observed, a circumstance which suggests definitely that leaving the antrum *in contact* with the residual gastric pouch does not invite stomal ulcer. On the contrary, *antral exclusion* has long been known to be an ulcer provoking operation. In the hands of Mikulicz, Riedel and Payr, segmental resection was unsuccessful, not so much because they failed to remove enough stomach, but primarily because they did not recognize that segmental resection vagotomized the antrum, thereby crippling the emptying mechanism of the reconstituted stomach²². In fact, 50 years after Mikulicz' statement of his experience with the procedure, I had to learn that these stomachs would not empty satisfactorily unless a supplemental pyloroplasty was performed. After a few such experiences, a complementary Heineke-Mikulicz pyloroplasty was added regularly in performing segmental resection. This practice terminated the difficulty and cleared up completely the baffling mystery of why patients who had undergone segmental resection had stomachs which did not empty. On the technical side too, complementary pyloroplasty proved a far simpler manner of dealing with a large indurated supraduodenal ulcer crater than the difficult task of securing a safe duodenal inversion with the Billroth II operation under such trying circumstances.

In addition to setting aside the thesis long held by surgeons that the antrum had to be removed to prevent recurrent ulcer, segmental resection also became a means of adducing convincing proof that, it was not necessary to remove a duodenal ulcer to cure it. However, this operation too, like the Billroth operations, was not free from the undesirable side-effects of the dumping syndrome.

TUBULAR GASTRIC RESECTION

The experience with segmental resection, just cited, suggested the necessity of looking further for an acceptable operation for ulcer. In 1940, a brief account of a few encounters with subtotal excision of the acid-secreting area of the stomach was published, in which procedure the residual stomach was converted into a narrow tube along the lesser curvature²⁰. In a few instances, a simultaneous gastrojejunostomy was added at the antral end of the stomach. The conversion of the residual stomach into a narrow tube obviously was not a satisfactory operation in that the storage capacity of the stomach was lost. With clarification of the criteria, which characterized an acceptable resection for ulcer on the Billroth II plan of operation by employment of the histamine-in-beeswax technique in dogs, my colleagues and I capitulated completely for a period of years to the Billroth II resection¹⁰. In reflecting upon this earlier experience with subtotal

excision of the acid-secreting area of the stomach as well as upon the experience with segmental resection, it became evident some gains in information might accrue from performing the excision of gastric tissue much as it was done in the operation of 1940, but with a plastic reconstruction in which the stomach was closed transversely. This is the procedure which I have come to describe as tubular resection with transverse gastropasty²³.

Employment of the midline incision in the upper abdomen, together with an extrapleural sternal split going out into the fourth left interspace has provided

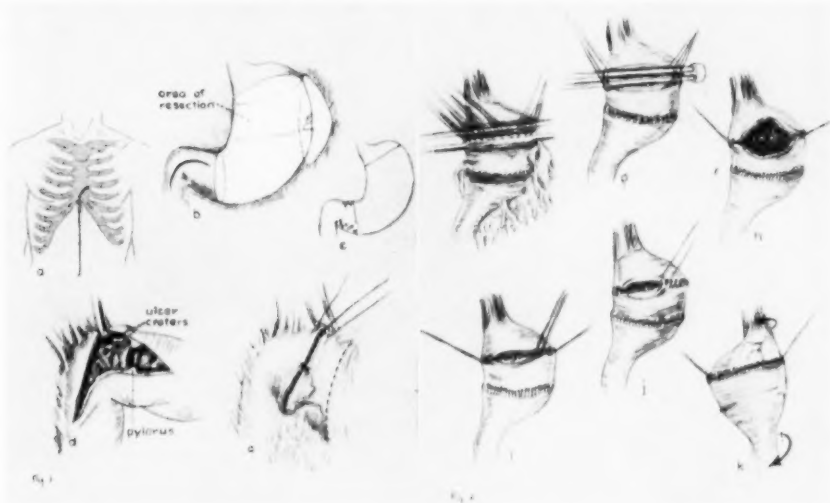


Fig. 6—The Technique of Segmental Resection. The steps of the procedure²² are illustrated in the accompanying sketches [reproduced from the J.A.M.A. **149**:18-23, (May), 1952, with permission of the publisher]. This operation is applicable to all peptic ulcers, save those of the antrum. Mikulicz' dissatisfaction with the operation undoubtedly stemmed from the circumstance that, it was not understood in his day that, a transverse section of the stomach severed the vagi nerves to the antrum. More than 50 years later, the present writer had to learn that for himself. This circumstance made it necessary to do a supplemental Heineke-Mikulicz pyloroplasty upon the first few patients operated upon in this series. Thereafter, a complementary pyloroplasty was routinely added at the initial procedure.

excellent surgical exposure. The vagi nerves to the antrum are preserved—a distinct advantage over segmental resection. A pylorotomy of the Heineke-Mikulicz variety is added therefore only in the presence of a narrow or indurated duodenum. The transverse closure of the residual gastric pouch reestablishes a fairly satisfactory gastric reservoir.

This operation may be likened to subtotal excision of the thyroid for the hyperplastic goiter of Graves' disease. Unlike the excision technics in the Billroth operations, no one segment of gastric tissue is removed completely. My associate,

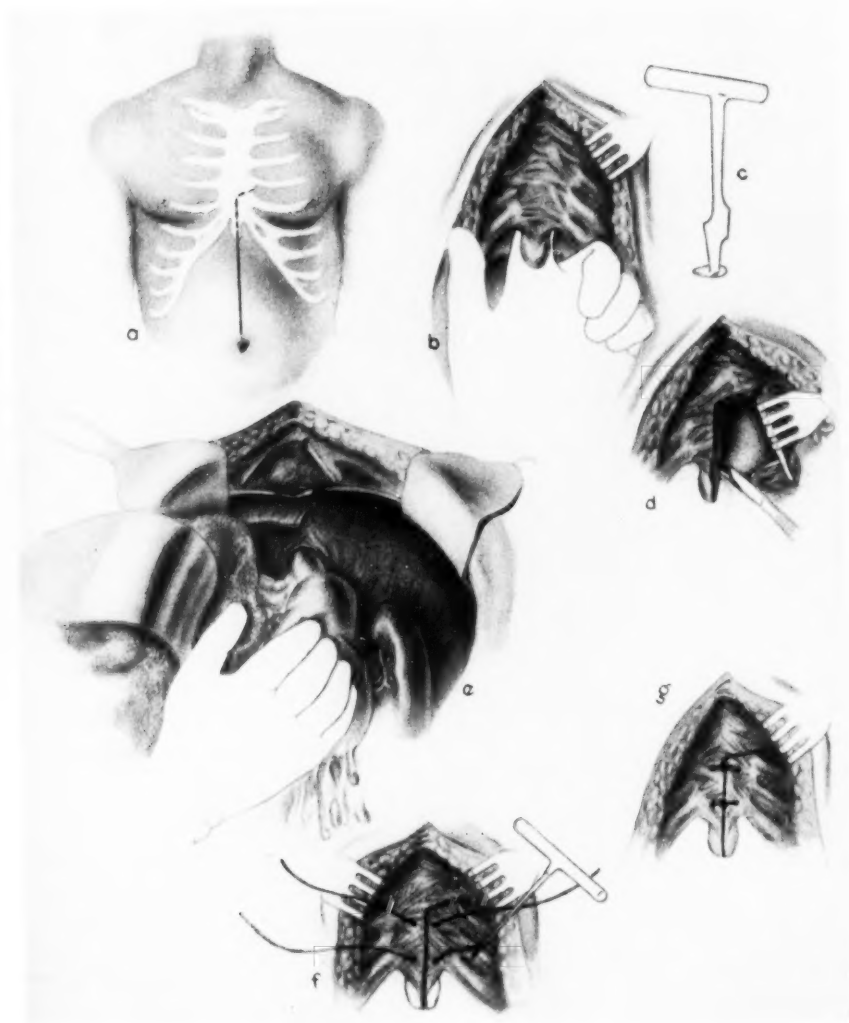


Fig. 7—The Extrapleural Sternotomy Incision.

- a. The incision.
- b. The finger is inserted beneath the ensiform, preparatory to insertion of the Lebsche sternal knife.
- c. The Lebsche sternal knife. The knife is driven with an ordinary orthopedic hammer.
- d. The left margin of the divided sternum is retracted laterally. The knife is shown cutting the diaphragm downward. The incision in the diaphragm extends to the point at which the pericardium comes directly into view. It is obvious that, a deliberate opening of the pericardium will permit even easier retraction of the rib margin on the left side.
- e. The exposure obtained with the sternotomy incision. The whole attic of the upper left abdomen comes immediately into view. The avascular ligament of the left lobe of the liver has been divided and the liver has been retracted to the right. It is obvious that, this incision affords excellent exposure for repair of paraesophageal hernia²³ as well as for total gastrectomy, in which procedure excision of several centimeters of esophagus is to be performed. Moreover, sternotomy is very helpful in the conventional subtotal gastric resection and is employed routinely in this clinic in that operation.
- f. Re-wiring of the sternum. Ordinarily, two No. 24 stainless steel wires suffice. The hand-driven awl with a short side arm for engaging and pulling the wire through is shown.
- g. The sternum re-wired. The midline incision in the abdominal wall is closed in the conventional manner with two rows of interrupted silk.

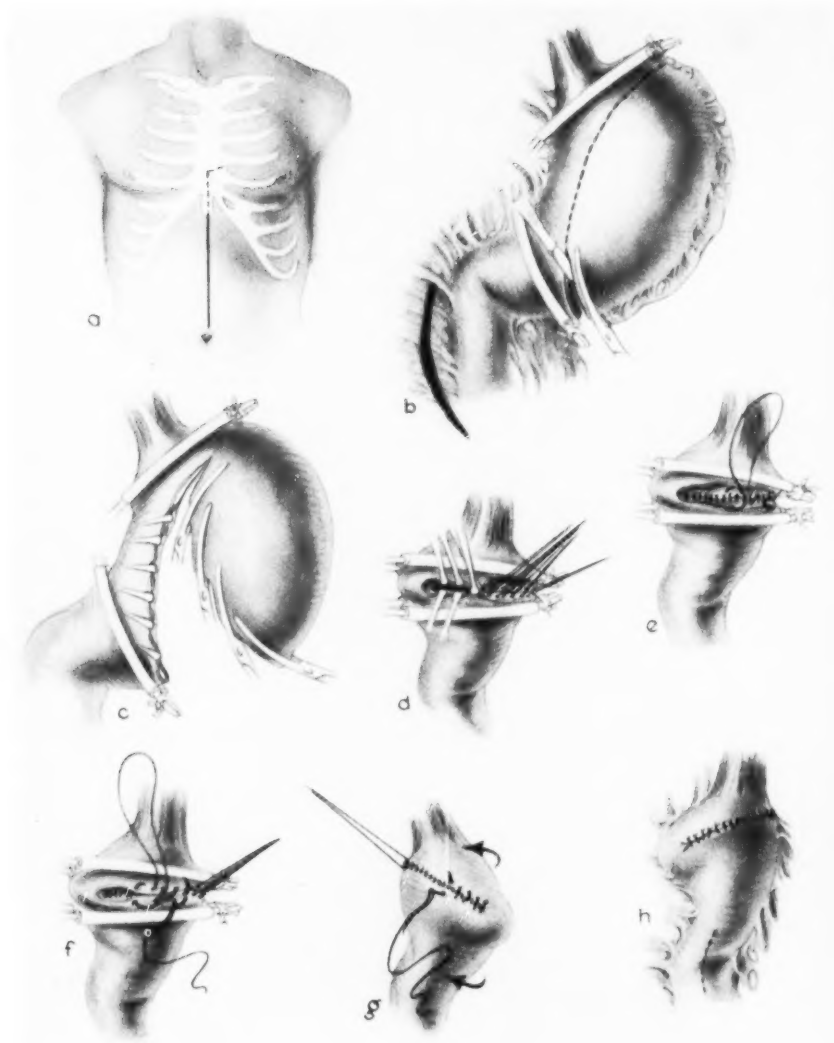


Fig. 8—The Technic of Tubular Resection With Transverse Gastroplasty.

- a. The sternotomy incision going extrapleurally into the fourth left interspace.
- b. The excision of gastric tissue. "Shoe-String" covered intestinal clamps afford satisfactory hemostasis. (In area, the amount of tissue excised constitutes a 75 per cent gastric resection. Inasmuch as almost the entire antrum remains, the removed gastric tissue is ordinarily not as heavy as in a conventional three-quarter gastric resection after the Billroth plan of operation.) An incision has been made in the avascular ligament of the duodenum to facilitate bringing the proximal and distal ends of the greater curvature of the residual gastric pouch together.
- c. As the removal of gastric tissue goes forward, Curved "Half-Length" clamps are placed on the distal side to prevent leakage from the stomach; on the remaining segment, long Allis clamps are placed merely approximating the mucosa. This expedient, together with preliminary placement of intestinal clamps, affords satisfactory hemostasis.
- d. The Allis clamps are divided into two groups; those placed on the upper segment are grouped together and those placed on the lower segment are grouped together. The tips of the intestinal clamps now are brought together. The suture commences at the greater curvature end of the stomach, several Allis clamps being released to permit placement of a number of 4-0 silk sutures.
- e. A running suture of catgut is placed over the interrupted silk. The purpose of the interrupted silk sutures shown in "d" is essentially that of affording good coaptation. It is the running catgut suture which provides satisfactory and adequate hemostasis.
- f. The first anterior suture is of running catgut, which in turn is followed by an inverted row of interrupted silk sutures.
- g. Placement of sutures on the posterior side. By rotating the stomach, it is comparatively easy to inspect the posterior suture line and to place a few additional interrupted silk sutures to insure satisfactory peritoneal inversion.
- h. The completed suture. It is apparent that the greater curvature has now become the shorter one and that the lesser curvature is considerably longer than the greater curvature. A Heineke-Mikulicz pyloroplasty is added only in the presence of a narrowed duodenum, or in the presence of active hemorrhage.

The antrum is not vagotomized in tubular resection with transverse gastroplasty; hence, the Heineke-Mikulicz pyloroplasty is only necessary in the presence of a good indication for its performance.

Tubular resection has been employed with considerable satisfaction in patients with massive hemorrhage from duodenal ulcer operated upon as emergency procedures. Inasmuch as the duodenum is not divided as in the Billroth II operation, the staunching of blood flow in massive hemorrhage as well as closure of the duodenum in the so-called "irremovable duodenal ulcer" are relatively easy and safe procedures.

Dr. F. John Lewis¹¹, has plotted the surface area of gastric tissue removed in the conventional Billroth operation, segmental resection as well as in tubular resection. It is interesting that 75 per cent of the surface area is removed in each of these; the extent of excision of the acid-secreting area varies considerably. And inasmuch as the antrum has the thickest wall, the weight of the tissue removed in segmental as well as in tubular resection is less than in the Billroth operation.

The experience with tubular resection has been very gratifying. It obviously cannot be applied to gastric ulcer. Loss of weight and other undesirable effects of the dumping syndrome are not as noticeable following this operation as after the Billroth operation. Moreover, my associate, Dr. Lloyd MacLean¹² has been able to show that, fat excretion in the stool following tubular resection is regularly less than 5 per cent of the fat ingested, a finding which is in sharp contrast with the fat content of the stool, following the Billroth II operation. This circumstance suggests definitely that in those patients in which weight loss is observed, it is owing to diminished food intake, or with intake of food of lesser caloric value than that of the conventional fattening ulcer diet.

In the dog, tubular gastric resection also protects against the histamine-in-beeswax provoked ulcer, an occurrence which has proved very useful as a criterion of prediction in determining whether a given operation will protect against recurrent ulcer in man. All my colleagues who have had an opportunity to perform this operation and to observe a number of patients who have undergone this procedure following operation are enthusiastic over its promise. Inasmuch as the vagi nerves are preserved, the stomach retains its motility, a distinct advantage over the segmental resection. And not every patient accepting tubular gastric resection needs a pylorotomy. Unfortunately, it is only applicable to duodenal ulcers. Tubular resection with a Heineke-Mikulicz pyloroplasty, however, has proved useful in the relief of esophageal narrowing from the regurgitation of acid-peptic juice, as has previously been reported for the Billroth resection^{23,24}. It is also a very satisfactory operation in bleeding duodenal ulcer. Several patients with massive hemorrhage have been subjected to this operative mode of attack. A long linear pyloroduodenotomy is made. The bleeding point is sutured from within the lumen of the duodenum. A transverse closure (Heineke-Mikulicz) is made and the operation is concluded with a tubular resection. This is obviously a simpler and a safer operation than a Billroth II operation under these circumstances.

SUMMARY

The history of the development of gastric resection techniques for peptic ulcer has been reviewed briefly. The conventional Billroth I or II operations afford adequate promise against recurrent ulcer, when an adequate excision is done. The experience of this clinic in patients followed as long as 10 years after operation suggests that the incidence of recurrent peptic ulcer is approximately one per cent. The most frequent cause of recurrent ulcer is failure to excise enough of the greater curvature. This occurrence is noted especially in adipose,

hypersthenic patients. When re-operation is done for recurrence in such individuals, it is observed that, the surgeon who did the first resection failed to mobilize the fundic end of the stomach adequately. The extrapleural sternotomy incision, when combined with a mid-line incision in the upper abdomen, affords excellent exposure, even in hypersthenic patients.

The experience of the Life Insurance companies in this area following performance of an adequate gastric resection for peptic ulcer has been such that, after a lapse of a few years following operation, a large number of the patients from this clinic have been able to get life insurance as standard risks. This very circumstance indicates the veering about in attitude of actuarians concerning the promise of operations in protecting against recurrent ulcer. A decade ago, internists, military medical people, as well as actuarians, were reluctant to believe that operation held any promise of thwarting the ulcer diathesis permanently. This is no longer a major concern.

Today, however, the dissatisfaction of many surgeons concerning the Billroth operations is over the circumstance that, an otherwise satisfactory operation is accompanied by undesirable side-effects—a group of symptoms given the label of the “dumping syndrome”—frequently enough to make the patient, as well as his physician or surgeon, weigh carefully the indication for operation. In the experience of this clinic, the “dumping syndrome” appears to be fairly persistent in some degree in approximately 20 per cent of the patients. In 2 per cent of the patients, it may be disabling.

The experience of this clinic with segmental resection indicates quite definitely that, *retention* of the antrum does not compromise the promise of this procedure. In fact, no recurrences have been observed in 90 patients who underwent segmental resection for peptic ulcer in this clinic. It is *separation* of the antrum in the antral exclusion operation which potentiates the recurrence of ulcer after an otherwise satisfactory gastric resection for peptic ulcer. These observations suggested the possibility of modifying slightly the tubular resection which the writer²⁰ described under the title of “Subtotal Excision of the Acid-Secreting Area” in 1940. Transverse closure of the residual gastric pouch is described herein as tubular resection with transverse gastropasty. A group of approximately 90 patients with duodenal ulcer have now been operated upon by this technic. The results of the operation appear very promising. The technic of the procedure is described and illustrated.

The vagi nerves are retained. A Heineke-Mikulicz pyloroplasty therefore is mandatory only in the presence of a narrowed duodenum, or in the presence of active hemorrhage. This operation appears to be followed by considerably less evidence of the “dumping syndrome” than are the conventional Billroth operations, or even segmental gastric resection. This operation protects against the histamine-in-beeswax provoked ulcer in the dog. Inasmuch as a miniature gastric pouch is re-established and the vagus innervation to the antrum as well as to the alimentary tract remains intact, this operation would seem to afford at least as

much promise as any of the technics of gastric resection which have been described heretofore.

(The sketches employed to illustrate the procedures described herein were done for me by Mrs. Louise Marshall Follett. The writer is pleased to add that, they make an important contribution to this presentation.)

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PROBLEMS IN GASTRIC SURGERY*

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and

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We are happy to appear on the program for the Course in Postgraduate Gastroenterology and have chosen to discuss gastric surgical problems which require additional clarification or emphasis. The material is presented in a didactic manner, colored by our own impressions and experiences.

"GASTRIC ULCER"—A SURGICAL DISEASE

A duodenal ulcer is primarily a medical disease, and surgery is used for the treatment of its complications. A gastric ulcer, on the other hand, is primarily a surgical disease for frequently such an ulcer is malignant. All ulcers of the greater curvature are cancer until removed and studied by the pathologist. Furthermore, an ulcer anywhere in the stomach of a patient over forty years of age, especially if it is more than 1 centimeter in diameter, and if the gastric acid is absent or low, is assumed to be carcinoma until removed and examined by the pathologist. Ten to twenty per cent or more of all gastric ulcers, thought clinically to be benign, turn out to be malignant.

We therefore believe that those who advocate¹ gastric resection on all gastric ulcers are more nearly correct in their position. Let us take the case of a young patient under forty, with recent symptoms, hospitalized and under good medical supervision. If this patient reveals an ulcer on the lesser curvature smaller than 1 centimeter in diameter, and has a normal or high gastric acidity, we believe that medical treatment may be continued until the patient is well, provided that he shows evidence of clinical and fluoroscopic healing over a two week period. This group represents about 25 per cent of patients treated for gastric ulcer. If the symptoms recur, or if the ulcer does not disappear by fluoroscopy in six weeks, we feel that this patient should have a gastrectomy removing the ulcer. Any operation which does not remove the ulcer is not justified. Such operations as subtotal gastrectomy below the ulcer, simple gastroenterostomy, or vagotomy with or without gastroenterostomy have no role in the therapy of gastric ulcer.

Local excision of the ulcer is a poor operation because the conditions producing the ulcer have not been altered. Furthermore, local excision operations have been followed by recurrences in the majority of cases.

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High gastric ulcers on the posterior surface of the cardia have caused us the greatest diagnostic and technical difficulties. The fluoroscopist is very apt to miss this ulcer. We make every effort to perform the gastrectomy below the diaphragm. Sometimes a very small amount of stomach is left but unless the case is cancer we believe that any amount of stomach is better than none at all. Furthermore, we like to preserve the normal esophagogastric mechanism if possible.

Gastrectomy for gastric ulcer is a very satisfactory operation today, the immediate mortality being about 2 or 3 per cent². The late results are 90 per cent excellent. Patients fare better than do those submitted to operation for duodenal ulcer. Gastrojejunal ulcer is extremely rare; in fact, we have never seen one.



Fig. 1—(Case 2)—Revealing large penetrating duodenal ulcer. Gastrectomy, using exclusion procedure, performed Sept. 26, 1950.

Activation of an ulcer by cortisone therapy seems to have been definitely proved by several recent case reports³. Uniquely, all the ulcers so activated have been gastric, and perforation and bleeding have been conspicuous in such cases (See Case 4 below).

MASSIVE BLEEDING PEPTIC ULCER

Most cases of bleeding peptic ulcer will respond to medical therapy, however, between 5 and 10 per cent still continue to bleed and die despite the best medical care⁴. It is now conceded that if this 5 per cent is subjected to surgical care sufficiently early most of them can be salvaged. Thus the problem is to

select from all the bleeding cases the 5 per cent requiring surgical care. The difficulty in the past has been to determine the criteria for surgery, or to define massive gastroduodenal hemorrhage. For the past few years we have found it very helpful to regard and treat these cases as any other patients in traumatic shock. For some reason, massive bleeding from peptic ulcer has been considered different and apart from hemorrhagic shock produced by trauma, when as a matter of fact, both groups of cases are similar in every way and should be treated alike.

The shock thus produced is worth a brief review^{5,6}. In essence hemorrhagic shock is a series of events following the reduction of the effective blood volume. In order to compensate for the reduced venous return of blood to the heart, reflex vasoconstriction is produced, usually accompanied with a slight elevation of the pulse. If the loss of circulating blood stops before an indefinite point, restitution of the blood volume is made up by dilution. With further loss of



Fig. 2—(Case 2)—Jejunal or anastomotic ulcer following one year after gastrectomy.

blood and fluids, there is decreased cardiac output and the blood pressure begins to fall. There is a progressive anoxia of the tissues with resulting damage to vital organs such as the brain, heart, liver, and adrenals. Indeed, anoxic liver damage is regarded by many to be one of the most serious phases of shock. If there is extensive gross destruction, the shock is intensified with particularly severe effect upon the kidneys.

In such patients, laboratory tests for shock, including the hematocrit, are apt to be misleading for the patient is bleeding on while the laboratory performs the test. A falling blood pressure still remains the vital criterion of shock. If the systolic blood pressure readings are in the range of 80 to 100 millimeters, the blood loss has usually exceeded 25 per cent. If the blood pressure is 60 millimeters or below there is likelihood that the blood loss has been 35 to 40 per cent of the total volume. Therefore the only logical way to correct such shock is by the

immediate use of whole blood. If between two to four pints of whole blood are ineffective in maintaining the blood pressure at a level of 85 millimeters of mercury or better, then the next step in the control of shock should be taken, namely, to stop the hemorrhage by operative procedure. We do not believe in an arbitrary period during which we will let a peptic ulcer patient bleed before surgery is employed. Some set an arbitrary time of 48 hours yet we are all aware that shock persisting from hemorrhage for as long as 48 hours is very serious⁷. One would never think of letting other types of "internal hemorrhage" persist for this period. We operate on these patients when we feel that they are losing the blood as fast as it is being administered. It requires from 6 to 24 hours to obtain all the necessary tests, to make the diagnosis, and to prepare the patient for operation.

Patients who stop bleeding after being admitted to the hospital are placed under careful medical regime. They are observed closely and if bleeding resumes they are prepared for operation as quickly as possible.

Our patients have received much better care since we have adopted the policy of treating them as we treat patients with shock and hemorrhage from any other cause. When patients are first admitted to the hospital with massive hemorrhage the worst ones will often have one or more of the following characteristics: age of 45 years or older; hematemesis; recurrence of bleeding after cessation; some degree of pyloric stenosis; severe pain at the onset of the hemorrhage. These factors are ominous.

A correct diagnosis can usually be made by a careful history, physical examination, and by the use of routine blood and blood chemistry tests upon admission to the hospital. The most puzzling patients are those admitted with no previous history or x-rays. In this group we attempt to eliminate hemorrhagic diathesis and cirrhosis as a cause of hemorrhage.

The use of a thin barium swallow and fluoroscopy is advocated by Harvey⁸ and Amendola⁹. Weintraub¹⁰, however, opposes this procedure because of the possible harm done to the patient by moving him around. He also believes that the x-rays obtained are unreliable with blood in the stomach or duodenum. We feel we gain nothing by attempting to fluoroscope the massive continuous bleeding ulcer. If the bleeding stops that is another matter.

We do not operate upon a patient unless we are fairly certain of the diagnosis but a problem arises when one does operate and does not find an ulcer. What course should one take? We do not hesitate to do a gastrotomy or a duodenotomy. We frequently wash the stomach and duodenum out with a warm saline solution and then use retractors and a light for inspection. In some cases with extensive gastritis, questionable ulcer, or marked prolapse of the mucous membrane, we have proceeded to perform a subtotal gastrectomy. Amendola⁵ advises closing such a patient without further disturbing the stomach. On the other hand,

Stewart believes in doing a gastrectomy in all of these cases. We try to individualize in this group.

Subtotal gastrectomy is our choice of operation on these bleeding cases with ulcers. It is doubtful that the bleeding vessel can be ligated with any consistency; in fact, we have never been able to do it. We make every effort to remove the pylorus in such cases, and if this is impossible we perform an exclusion operation removing, if possible, the antral and pyloric mucous membrane. If the latter is not practical we perform a vagotomy with the pyloric exclusion.



Fig. 3—(Case 2)—Twenty days following vagotomy for jejunal ulcer. Large jejunal ulcer shown in Fig. 2 has entirely disappeared and the patient is symptom-free.

In regard to complications, antibiotics have practically eliminated pneumonia and peritonitis. In some cases the duodenal stump is difficult to close because of the extent of the duodenal ulcer and the inflammatory reaction about it. In these severe cases it is imperative to remove the ulcer to prevent recurrence of the bleeding. Great care should be exercised when closing the duodenal stump. Omentum or nearby tissue should be sutured over the stump and in all closures that are not satisfactory at the time, a drain should be left down to the duodenal stump. Late recognition of a blown-out duodenal stump will more often than not end in a fatality. If there is any question about the integrity of the common

duct a T tube is passed through the common duct into the duodenum to remain for several days after the operation. We also employ gastric drainage postoperatively for two to five days. This is quite sufficient to decompress the stomach and we have not found jejunostomies, such as those performed by Allen, to be necessary.

VAGOTOMY

In order to evaluate the operation of vagotomy for peptic ulcer all the vagus fibres would have to be divided. That this is accomplished at every operation is doubtful. The operation is now seldom performed alone—usually being combined with some other operation, as gastroenterostomy or gastric resection. In the former operation neither the pylorus nor the ulcer is disturbed. In the latter operation the ulcer or the pylorus may or may not be removed. If the pylorus is not removed the mucosa may or may not be excised from the antral stump. Furthermore, varying amounts of stomach are removed by different surgeons.



Fig. 4—Reveals typical caudiflower or umbrella effect in case of prolapse of gastric mucous membrane. This patient had no gastric symptoms.

And lastly, the ulcer may be gastric, duodenal, or both. All of these variants should be taken into consideration when gathering statistics, and the follow-up should be a matter of years.

There seems to be ample proof that vagotomy is a good operation for an anastomotic or jejunal ulcer following gastroenterostomy or gastrectomy¹¹ (Figs. 1, 2, 3—See Case 2).

We believe vagotomy with gastroenterostomy is advisable in cases of duodenal ulcer where, because of local or general conditions, it is thought inadvisable to perform a gastrectomy.

We oppose vagotomy and gastroenterostomy for gastric ulcer because of the possibility of malignancy.

We would never perform vagotomy combined with any operation for bleeding ulcer unless the ulcer were removed.

Vagotomy with gastrectomy for gastric ulcer is not necessary because anastomotic ulcers very rarely follow in such cases. We have never seen one.

Vagotomy with gastrectomy for duodenal ulcer is an advisable procedure in the prevention of marginal ulcer when the ulcer and the pylorus or its mucous membrane are not removed.

**"ACUTE PERFORATED PEPTIC ULCER"—QUESTION OF A DEFINITIVE OPERATION
FOLLOWING THE EMERGENCY OPERATION OF PLICATION**

A perforated peptic ulcer is usually treated surgically by simple closure of the perforation. The mortality has been steadily decreasing and is now probably not over 10 per cent¹², and may be as low as 3 per cent¹³. This may be compared with a mortality of 44 per cent up to 1916, and 26 per cent to 1940¹⁴.

Several factors make the prognosis less favorable. They are (1) a long time interval between perforation and treatment, (2) a patient in the older age



Fig. 5—(Case 3)—Reveals prepyloric defect produced by aberrant pancreatic tissue nodule.

group, (3) a gastric ulcer rather than duodenal, and (4) perforation in a female patient.

The case fatality rate, however, is decreasing in all these groups as a result of better pre- and postoperative care, including nasogastric suction, the use of antibiotics, blood, and similar supportive therapy. Consideration must also be given to improved anesthesia, with the prevention of aspiration during and after the operation.

Recently there has been strong opinion voiced in favor of performing a definitive operation, such as gastrectomy, on all or most all of the patients who recover from perforation¹³. Of course, we formerly believed that an ulcer patient who survived a perforation was cured. Glenn¹⁵ states that he advises patients who have undergone simple plication for perforation to return for definitive operation within six months. Turner¹⁶ states, "In the immediate postoperative period prophylactic surgical therapy (preferably subtotal gastrectomy) is advised in all patients with perforated ulcer". Turner further states that 85.3 per cent of

the patients treated only by plication continued to have symptoms of peptic ulcer—75.5 per cent of the cases having severe symptoms.

Others¹⁷ state that about 50 per cent of the recurrences are mild, 25 per cent are severe but do not require operation, and 25 per cent require further surgery.

At the Knickerbocker Hospital we find that 16 per cent of peptic ulcer patients admitted for definitive surgery have previously perforated on one or more occasions.

We do not know what the truth is about the asymptomatic group following perforation. Follow-up reports are few and, as is seen, the figures are at wide variance. Until more good reports are forthcoming we will have to individualize on the choice of cases on which we recommend further definitive surgery. We do know that a patient who has perforated and recovered still probably has an ulcer diathesis. He is the victim of a chronic disease which is characterized by periods of remission and relapse. In order to know what happens to him he has to be carefully followed for many years. If he is going to recover and stay well we do not want to submit him to a major surgical procedure, but if one of the serious ulcer complications can be anticipated the patient should be subjected to what we hope would be a curative operation (See Case 1).

PROLAPSE OF THE GASTRIC MUCOUS MEMBRANE

Röntgenologists are now reporting prolapse of the antral mucous membrane in from 1.04 per cent¹⁸ to 15.5 per cent¹⁹ of the cases who come to them for fluoroscopy (Fig. 4). Surgical pathologists seldom put this diagnosis on their reports, perhaps because not many specimens operated for this condition are sent to them. In talking to several pathologists they have informed me of isolated cases that impressed them very strongly. There have been relatively few cases submitted to surgical treatment, and moreover, most physicians will not accept mucosal prolapse as a primary or secondary cause of gastric symptoms. It seems important, therefore, that gastroenterologists watch for these cases, study them, and report them in the hope that the subject can be clarified.

Authentic cases in which massive bleeding or pyloric obstruction complicated antral prolapse have been reported. All authors stress the fact that since there is nothing to see on the outside of the stomach or duodenum, a gastrotomy or even a duodenotomy is absolutely necessary to definitely establish the diagnosis at the operating table. Most of the cases operated upon have had a pylorotomy followed by a pyloroplasty of the Heinecke-Mikulicz or Finney types. We prefer instead of a pyloroplasty, a pylorectomy followed by a gastrojejunostomy of the Polya type, or some modification of it. We dislike pyloroplasty as an operation, and feel that by resecting the pylorus and adjacent antrum and duodenum the entire specimen can be studied. We thus will even-

tually determine the role, if any, that prolapsed gastric mucous membrane plays in gastroduodenal diseases.

In our minds the secondary role played by prolapse is unquestioned. We have seen on more than one occasion a pedunculated antral tumor pass down through the pylorus pulling along a liberal fold of mucous membrane at its base, and today we are reporting a case (see Case 3 below) associated with an aberrant pancreatic rest at the pylorus (See Fig. 5 and Case 3).

SUMMARY

The first topic discussed was gastric ulcer which again deserves further emphasis as to its fundamental surgical nature. It is amenable to proper surgery with excellent results, although some gastric ulcers present exceptional problems.

We have pointed out the fact that massive hemorrhage in peptic ulcer differs in no way from hemorrhagic shock seen in cases of ruptured spleens, livers, and ectopic pregnancies.

We believe a statement dealing with the indications for vagotomy in gastric surgery was warranted.

Because of the recent controversy over the performance of definitive gastric surgery subsequent to plication in perforated peptic ulcer, we have discussed this problem.

We have commented on the subject of prolapse of the gastric mucous membrane, because at present it seems to be a nebulous disease.

Finally, four case reports are given below illustrating many of the problems in the surgery of peptic ulcer.

CASE REPORTS

Case 1:—Complicated perforated, bleeding duodenal ulcer.

This 60 year old white male was admitted to the Knickerbocker Hospital on February 20, 1952. He came into the Accident Ward having had severe epigastric pain for 29 hours. Examination revealed a board-like, rigid abdomen. The patient was in shock, blood pressure 80/60. At operation two hours after admission, there was 1,000 c.c. of yellow fluid aspirated from his abdominal cavity, and the intestines were covered with fibrinous material. There was a 2 centimeter perforation on the superior surface of the first portion of the duodenum. A biopsy of the ulcer was taken and then it was plicated with omentum being placed in the suture after the manner of Graham.

Postoperatively the patient developed right lower lobar pneumonia, even though he was on antibiotics prior to and following his operation.

Four days postoperative, when he was getting over his pneumonia, he developed severe diarrhea for several days.

He then began to vomit occasionally and a barium swallow revealed marked gastric retention with pyloric obstruction.

Thirty days postoperative the patient had another barium swallow, and 12 hours later he was found lying in the bathroom vomiting large amounts of blood and passing a large bloody stool. He was in shock and his blood pressure again went down to 80/60. The patient did not respond to two pints of blood and accordingly 14 hours after this bleeding episode several pints of reserve blood were obtained and the patient was submitted to a gastrectomy.

At the time of the gastrectomy the whole first portion of the duodenum was replaced by an ulcer which was perforating into the head of the pancreas and active bleeding was taking place in the base of the ulcer. The ulcer could not be excised so several sutures were taken in its base in an attempt to stop the bleeding, and the anterior wall of the duodenum was inverted into a cone-like structure to act as a tamponade at the bleeding site. A posterior Polya anastomosis was performed and a large drain was placed down to the duodenal stump.

Four days after the gastrectomy the patient had definite evidence of a leaking duodenal stump. A catheter was inserted alongside the drain to the duodenal stump and mild continuous suction applied. The patient meantime was given whole blood and supportive treatment.

The patient was finally discharged 37 days after the subtotal gastrectomy, and 69 days following plication of his perforated ulcer.

The patient has been seen recently and has gained forty pounds and is free of symptoms.

This illustrates the following:

1. A patient operated upon 31 hours after perforation.
2. Postoperative pneumonia.
3. Duodenal obstruction following perforation.
4. Massive hemorrhage from the ulcer, requiring gastric resection.
5. Blown out duodenal stump.

Case 2:—The effectiveness of vagotomy for anastomotic ulcer (See Figs. 1, 2, 3).

This 43 year old white male was admitted to the New York Hospital, (Case #581 379), on September 22, 1950. He had severe and disabling duodenal ulcer pain for one year. We performed an exclusion gastrectomy. A large ulcer of the second portion of the duodenum was found, penetrating into the pancreas, and there was extensive inflammation of the pancreas and duodenum, the whole

mass was four inches in diameter. The stomach had to be divided proximal to the pyloric sphincter, the pylorus and antral mucous membrane were not removed. The patient did well for eight months following. He then began to have marked symptoms. X-rays revealed a large penetrating marginal ulcer. Banthine and medical treatment did not relieve his symptoms. On September 15, 1951, one year after his gastrectomy, the patient was reoperated upon and a subdiaphragmatic vagotomy was performed. At the time of the vagotomy the old ulcer of the duodenum was not present and the pylorus and duodenum appeared normal. The gastrojejunostomy was in good condition, there being a three finger opening in the anastomosis. One inch distal to the anastomosis, there was a jejunal ulcer, the crater of which would admit one's thumb.

Following the vagotomy the patient was immediately relieved of all symptoms and in a matter of one month it was impossible by fluoroscopic examination to see the marginal ulcer which formerly had been very definite. The patient has remained symptom-free since the vagotomy.

Case 3:—Prolapse of antral mucous membrane with aberrant pancreatic tissue.

This 55 year old white male admitted to the New York Hospital, (Case #495 414), on November 26, 1950, over a five year period had five severe bowel hemorrhages with mild indigestion. By fluoroscopy no ulcer could be visualized, but what was taken for a pyloric polyp was identified. Because of the repeated hemorrhages the patient was submitted to operation on November 30, 1950. The only gross finding was a small firm nodule in the lower antral wall, about the size of the end of one's index finger, one centimeter from the pylorus. A gastrotomy was then done. The mucous membrane over this fixed nodule was redundant and with a small sponge stick could be easily pushed down some three centimeters into the pylorus. The mucous membrane was not ulcerated or especially thickened. We believe that the mucous membrane had at times bled, but no evidence of this was seen at operation, but the patient had been on a Sippy regime for 30 days before operation.

A pylorectomy was performed removing about 10 centimeters of the antrum, the pylorus, and 2 centimeters of the duodenum. A Polya gastrojejunostomy was then performed.

The pathologist reported on the specimen removed as follows: "The mucosa of neither stomach nor pylorus is ulcerated. In some areas it is extremely thick because of the numerous Brunner's glands. Immediately beneath the mucosa of the pyloric ring itself there is an irregular rounded mass of pancreatic acini. There is no anaplasia or any other suggestion of malignant tumor. At the border of the acinar tissue there is a closely packed collection of small pancreatic ducts and although these are imbedded in fibrous tissue that they seem to infiltrate, there is no true tumor here".

It has been two years now since operation and the patient has been symptom-free to date.

This was a real case of prolapse of the mucous membrane of the antrum. The ectopic pancreatic nodule did not move but was fixed beneath and not attached to the mucosa. Whether the pancreatic nodule had any bearing on the case we do not know. It is possible that the stomach was constantly attempting to extrude the mass. By performing a pylorectomy we were able to give the specimen to the pathologist for accurate study.

Case 4:—Activation of gastric ulcer by Cortisone therapy.

A 36 year old white male admitted to New York Hospital (Case #622 224) on February 23, 1952. For the four previous years he had had intermittent attacks of left subcostal epigastric pain which was relieved by food. X-ray examinations of the stomach had all been negative. For 15 years the patient had psoriasis to such a degree that it required some two hours for him to dress in the morning. His hands, face, and whole body were involved. A dermatologist recommended cortisone in doses from 100 to 150 milligrams a day. This therapy was started nine months before admission. The relief from his psoriasis was dramatic and it made a new man out of the patient. He tried discontinuing the cortisone but the psoriasis would reappear, so he had no intention of ever discontinuing it. His blood pressure, however, which was normal at the beginning of the therapy had now risen to 230/110. The patient was worried about this but said he would rather die of high blood pressure and no psoriasis than to live longer with psoriasis.

Eight days before admission the patient had severe left subcostal stomach pains. An x-ray at this time was negative but one day prior to admission he began to vomit blood and have many large loose tarry stools mixed at times with bright red blood.

On admission to the hospital the patient was in mild shock. He was given two pints of blood on admission. He seemed to stop bleeding for 24 hours but on the second day it was necessary to give him two more pints of blood. Despite the transfusions his hemoglobin continued to drop, falling to 7.2 grams on the second hospital day. The patient had nausea. He had marked abdominal pain, both being bad signs in these cases. Forty-eight hours after admission the patient was taken to the operating room and a gastric resection was performed. The ulcer was one inch and a half in diameter. It was posteriorly on the lesser curvature about two inches from the esophagus so very high that almost a total gastric resection had to be performed, about 85 per cent of the stomach was removed.

It is interesting to note that the patient's blood pressure when he went to the operating room was systolic pressure 110, pulse 130. The pressure of 110 was a shock level for him because his normal pressure was 230. On the advice of Dr. Ephraim Schoor the patient was given 100 milligrams of cortisone intra-

muscularly before the operation and 100 milligrams intravenously during the operation. This was done because of the probable adrenal insufficiency which this patient had and which had been produced by cortisone therapy. During the operation 2,500 c.c. of blood was given, being necessary to maintain his blood pressure just above shock levels. The patient did well immediately after operation, and has remained symptom-free though he still takes 100 milligrams of cortisone a day and his systolic pressure is still 230. We have had only one other such case as this in the New York Hospital.

1. This case illustrates the handling of massive hemorrhage.
2. It calls attention to the ability of cortisone to reactivate an ulcer.
3. It presented a high ulcer requiring removal of perhaps 80 to 85 per cent of the stomach.
4. Despite the large size of the ulcer it still was not malignant.
5. X-rays and fluoroscopy did not reveal the large ulcer.
6. The patient has had no gastric symptoms since operation. His systolic blood pressure is still 230 millimeters, he takes 100 milligrams of cortisone daily, and his psoriasis symptoms are minimal.

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DISCUSSION

Dr. I. Snapper:—For the treatment of a gastric or duodenal hemorrhage blood transfusions are necessary to combat the shock. Unfortunately many physicians and surgeons are not satisfied if the shock syndrome has disappeared, they also want to raise the hemoglobin to normal levels. The large amount of transfusions given for this purpose constitutes one of the main reasons why so many gastric hemorrhages continue. A hemorrhage of the stomach stops only if the circulating blood volume is reduced, and an excess of blood transfusions leads to an increase of the circulating blood mass. Therefore, the quantity of blood administered to an active bleeding ulcer should suffice to repair the vasomotor collapse and during the hemorrhage not too much attention should be paid to the hemoglobin figures.

The diet given during the hemorrhage is not without importance. If a patient continues bleeding on a starvation diet, a Meulengracht diet should be given. If, however, as is frequently the case, the patient who is on a Meulengracht diet continues to bleed, then only 1 tablespoon full of milk and lime water should be given every 15 to 30 minutes.

If the number of blood transfusions is restricted and careful attention is given to the diet, indications for surgical treatment of gastric hemorrhages will only seldom be encountered. Erosion of a large artery is a rare occurrence in stomach or duodenal ulcers.

The prognosis of gastric hemorrhages in patients with hypertension is unfavorable either with or without surgical intervention.

Dr. O. H. Wangenstein:—I should like to make a brief comment on bleeding. I enjoyed Dr. Patterson's paper very much. Obviously he has had a large experience in the surgery of peptic ulcer.

In 1944 I had come to the conclusion that when one operated for bleeding and found no ulcer, *if there had been hematemesis*—I think this is an important point—you can write it down that, the patient has an acid-peptic linked bleeding, whether he has cirrhosis, esophageal varices, or peptic ulcer. One comes to conclusions slowly and often one cannot retrace the steps which led to the conclusion; by that time (1944) I had made up my mind that, I would resect in such instances of hematemesis in the absence of clinical findings at operation as much stomach as one would for a bona fide duodenal ulcer. I was doing the conventional Billroth II operation then for duodenal ulcer. In the early summer of 1944 I did two such operations for patients in whom there had been hematemesis and no lesion could be seen or felt at operation. Both patients

proved to have a small erosion, high on the lesser curvature. Both patients have remained well. And in the intervening years, of course, many additional gastric resections have been done for patients with bleeding, who had experienced hematemesis, but in whom at operation no findings suggestive of ulcer were observed (Canad. M.A.J. 53:309, 1945).

There is one thing one should do always, if there are no findings at operation: that is, to measure the portal pressure. If portal hypertension is present—that is, a venous pressure in excess of 20 cm. of saline solution, I have come to favor excision of the entire acid-secreting area of the stomach anastomosing the esophagus to the antrum (Transactions and Studies of the College of Physicians of Philadelphia, April, 1950).

I have spoken of excision of the lower end of the esophagus for esophageal varices, together with sacrifice of the entire acid-secreting area of the stomach. In patients where that procedure has been done for the bleeding of portal hypertension, there has been no recurrence of hemorrhage.

There has been a definite and steady and continued falling-off in the mortality from appendicitis, from fifteen deaths per hundred thousand population in 1935, until for the last two years, the present mortality is approximately two per hundred thousand. And so similarly for bowel obstruction, too, there has been a definite lowering of the mortality during the past dozen years from a mortality of about eleven deaths per hundred thousand of population to approximately six per hundred thousand. Interestingly enough the two large continuing areas of mortality in bowel obstruction are at the extremes of life—from the difficult atresias in the new born, and from the obstructive cancers of the colon in the aged. In the ages of 15-65 years of age, the Metropolitan Life Insurance Company reports a mortality of four to five per hundred thousand population.

The mortality from peptic ulcer during the past thirty years, however, has remained very much the same, even though there has been great improvement in the mortality of perforation. Prior to 1940, the mortality of perforated peptic ulcer was in the area of 20 per cent. I think there have been several years, in our Clinic, when no deaths from perforation occurred. I think it would be safe to suggest that the present mortality of perforated peptic ulcer is certainly less than 5 per cent.

What causes this continued mortality from peptic ulcer? It is *hemorrhage*, primarily, too long continued medical management of many patients with peptic ulcer. We have good operations for peptic ulcer today and I think earlier operation is often in order, and especially for hemorrhage.

A mortality of four to five per hundred thousand, the present death rate from peptic ulcer over the last thirty years, is not large as contrasted with the mortality from appendicitis of fifteen years ago. We should, however, be noticing some improvement, and there apparently is none—certainly not in the vital statistics.

The area in which this improvement must come is in the management of hemorrhage. Hemorrhage, ordinarily, is a surgical problem. It is unfortunate that in the instance of peptic ulcer, internists continue to insist that bleeding ulcers are primarily a medical problem. This situation obviously is ripe for a change in point of view. Today peptic ulcer is probably *the* important surgical disease amongst acute benign affections of abdominal viscera of all diseases of the peritoneal cavity.

THE SURGICAL ASPECTS OF DIVERTICULITIS*

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One of the earliest descriptions of a complication of diverticulitis of the colon was that by Sidney Jones in 1859, a case of vesicocolonic fistula, but it apparently stimulated little interest. Nor did Mayo, Wilson and Griffin arouse much comment in 1907 with their report of a small series of "acquired diverticulitis of the large intestine". A clinical diagnosis of diverticulitis was rare until x-ray came into use. Visualization of the colon with barium by roentgen examination in 1914 provided a ready means of demonstrating diverticulosis of the large bowel. Though generally explained on a basis of muscular deficiency, the cause of diverticuli is not completely understood. It is quite evident, however, that by and large they develop during the years of degenerative changes and

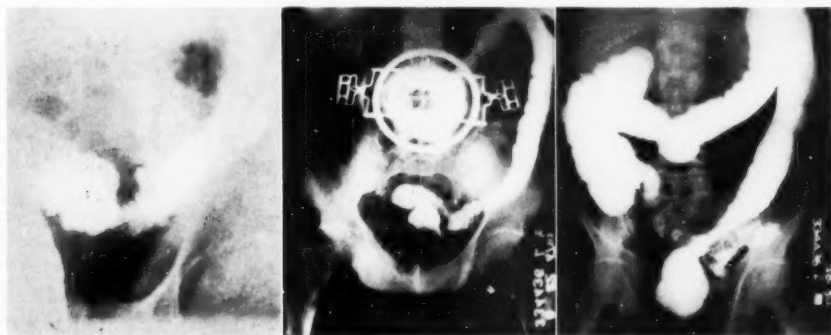


Fig. 1—(a) X-ray visualization of an obstructing lesion for which a colostomy was done. (b) After resection one month later because of persistent inflammation. (c) Site of anastomosis after resection and closure of colostomy.

are found chiefly in the older age group. The proportion of our population falling into that category is increasing with the extension of the life span, and so it follows that those whose practice is derived chiefly from the group over forty are encountering an increasing number of patients with diverticulosis.

The surgeon becomes concerned with diverticulosis when the patient develops diverticulitis with or without complications of obstruction, perforation, and subsequent abscess or fistula formation. Fortunately, though the frequency with

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which these situations are encountered has increased, we are better able to combat them since the advent of the chemotherapeutic and antibiotic substances and with our other advances in surgery.

It is virtually impossible to determine accurately the percentage of people with diverticulosis, but it has been estimated to be between 3 and 8 per cent of the general population. The fact that the vast majority never have x-ray studies nor are autopsied at death makes any figure conjectural. The reporting of routine barium enema studies does not give a true index because many of these patients have vague abdominal complaints which could be attributed to large bowel disease, thus producing an unreasonably high figure. This same source of error is found in reports of co-existing carcinoma of the colon and diverticulitis.

Most patients, perhaps 75 per cent, on whom a diagnosis of diverticulitis has been made may be managed conservatively on an ambulatory basis. With the remainder, the severity of their symptoms warrants hospitalization and many in this group eventually require surgery.

TABLE I

Group	Category	No. Pts.
I	Diverticulitis as secondary diagnosis	30
II	Diverticulitis treated conservatively	31
III	Diverticulitis requiring emergency surgery	12
IV	Diverticulitis requiring elective surgery	29
	Total	102

Because of the increasing need for surgical management in this condition we have subjected to critical analysis all cases of diverticulitis admitted to the surgical pavilions of The New York Hospital-Cornell Medical Center during the five year period from 1947 to 1951 inclusive. This period has been chosen because the patients have had the benefit of the new antibiotics. Their follow-up period is too short to be of significance but it is included for completeness.

A diagnosis of acute diverticulitis of the colon was made on 102 patients during this five year period, 59 males and 43 females. The average age was 60.2 years. To clarify the study, the group was divided into four categories: (1) diverticulosis as a secondary diagnosis; (2) acute diverticulitis treated conservatively; (3) acute diverticulitis requiring emergency surgery, and (4) acute diverticulitis treated by elective procedures.

GROUP I—SECONDARY DIAGNOSIS OF DIVERTICULITIS

Although their admission was based on another diagnosis, 30 patients were discovered to have diverticulitis in addition to their primary complaint. Seven-

teen in this group were men, 13 were women. Their average age was 62 years. Their diagnoses on admission were as follows:

TABLE II
SECONDARY DIAGNOSIS OF DIVERTICULITIS

Admitting Diagnosis	No. Pts.
Gastrointestinal Tract	
Esophageal varices	1
Scleroderma of esophagus	1
Prolapse of gastric mucosa	1
Duodenal ulcer	5
Marginal ulcer	1
Malfunctioning gastroenterostomy	1
Polyp of colon	1
Carcinoma of rectum	1
Carcinoma of anus	1
Fistula-in-ano	1
Hemorrhoids	3
	<hr/> 17
Biliary Tract	
Chronic cholecystitis	1
Acute cholecystitis	1
	<hr/> 2
Other	
Thyroid adenoma	1
Lipoma	1
Carcinoma of breast	1
Spondylolithiasis	1
Hiatus hernia	1
Inguinal hernia	4
Benign prostatic hypertrophy	1
Carcinoma of bladder	1
	<hr/> 11
Total	<hr/> 30

Excluding symptoms which were definitely related to other causes, such as rectal bleeding from hemorrhoids, 12 or 40 per cent of the 30 patients had symptoms which could reasonably be related to diverticulitis. Four had vague lower abdominal pain, four gave a history of marked constipation, two others had occasional lower abdominal pain associated with diarrhea, still another had occasional lower abdominal pain with constipation, another complained only of diarrhea. Diagnosis of diverticulitis in every case was made by x-ray except one in which a carcinoma of the rectum was removed. In this case an associated diverticulitis was discovered when the specimen was examined in the surgical pathology laboratory. Justifying a diagnosis of diverticulitis, barium enema demonstrated irritability and spasm in the colon in each case. Twelve patients

demonstrated diverticulosis elsewhere besides the sigmoid, but with no associated spasm or irritability.

Physical examination on admission gave little aid to a clinical diagnosis of diverticulitis, and routine blood studies were unremarkable. Presence of blood in stools was not significant in differential diagnosis, because of the nature of the primary diagnosis, namely, bleeding ulcer, or bleeding hemorrhoids.

Though the follow-up period on these patients is too brief to be of significance, none have yet required surgery for diverticulitis of the colon. They have

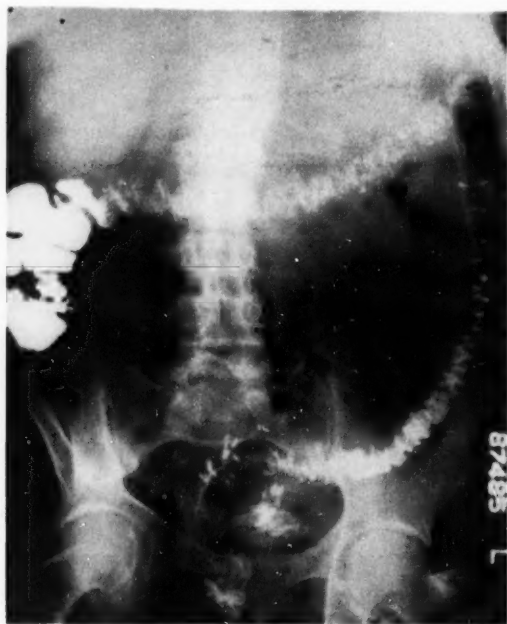


Fig. 2—Postevacuation film of barium enema, demonstrating barium in bladder due to vesico-colonic fistula. Such a fistula is not commonly demonstrated by barium.

been put on low residue diets and mineral oil, and of the 23 followed, 20 or 87 per cent have had no complaints referable to the large bowel.

GROUP II—CONSERVATIVE TREATMENT FOR DIVERTICULITIS

In the majority of cases, acute diverticulitis can be controlled by conservative measures. This is evident from the 31 cases, or 30 per cent of the total group, who did not require surgical treatment, and to them may be added the 30 whose diagnosis of diverticulitis was secondary to their cause for admission. Together these 61 cases comprise almost 60 per cent of our series and yet do not include

the patients treated elsewhere, in the out-patient department, on the medical service, or not at all.

Of the 31 cases admitted with a diagnosis of acute diverticulitis but which did not require operative treatment, 17 were men and 14 women. The oldest patient was 83, the youngest 38, with an average of 63 years. Ten of this group had intermittent symptoms for over a month, but the remainder had no significant complaints prior to the onset of their admitting illness. Twenty-seven of the 31 (87 per cent) had abdominal pain, alone or associated with diarrhea, constipation, or rectal bleeding. Seven (22 per cent) had grossly bloody stools.



Fig. 3—Postevacuation films demonstrating diverticula in both descending and sigmoid colon. (a) Preoperative barium enema. (b) Postoperative barium enema showing extent of surgery and mobilization of splenic flexure.

The average temperature on admission was 37.8; pulse and respiration rates were unremarkable. Average white blood cell count was 12.6 thousand. All but two patients demonstrated abdominal tenderness to some degree on physical examination, but only three had rectal pain and only one demonstrated a palpable mass. Routine proctoscopies were done, but were not helpful in arriving at a diagnosis, other than in revealing spasm at 12 to 15 centimeters in those with lower bowel involvement. Obstruction was not demonstrated, either clinically or by x-ray, as is shown by the classification. X-ray was used to confirm the diagnosis. In 29 of the 31 cases the sigmoid colon was the chief offender. Associated diverticula of the adjacent descending colon were common, but were rarely involved in the inflammatory process.

Following admission, the patients were usually given nothing by mouth and parenteral fluids. At the present time we believe antibiotics should be given routinely, but only 22 of this group were so treated. During the acute phase, penicillin and streptomycin are the usual medications, but after oral fluids have been instituted, the medications are changed to sulfathaladine, aureomycin or terramycin. The diet is gradually advanced from fluid to low residue as the acute inflammatory process subsides, and mineral oil is given to insure a soft stool.

As with Group I the follow-up again is limited because of the recent nature of the study but also because some of the older patients died from other causes.

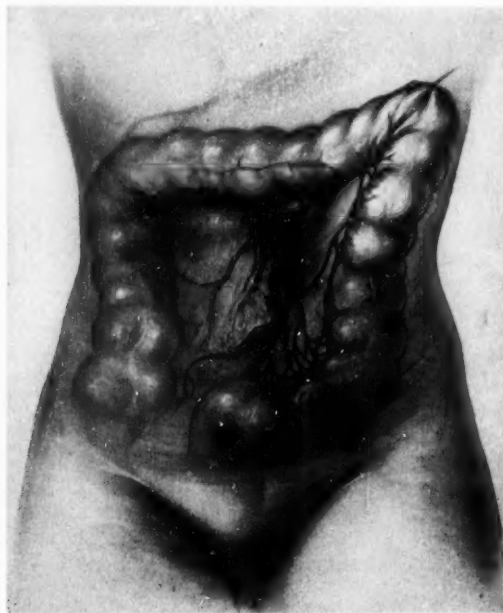


Fig. 4—Blood supply of descending colon and sigmoid requires careful identification when mobilizing bowel for more radical resection.

Of 24 followed for more than six months, 17 or 70.8 per cent have had no large bowel symptoms since their discharge. Seven have continued to have some difficulty, but only one required re-admission for rectal bleeding.

GROUP III—EMERGENCY SURGERY REQUIRED

An emergency surgical procedure is rarely needed for acute diverticulitis. In this series only 12 patients underwent surgery within 48 hours after their admission to the hospital. Seven were men, five were women. Their average age was 61.6 years.

Only one patient had a history of chronic symptoms of constipation and intermittent cramping lower abdominal pain. Duration of acute symptoms averaged $3\frac{1}{2}$ days. Without exception the acute complaint was abdominal pain and cramps and three patients also had protracted nausea and vomiting. One patient gave a history of weight loss, but this is not surprising in view of the general lack of chronic symptoms. Four of the twelve had diarrhea. Two had constipation. Six denied any change in stool habit. None had melena.

Average temperature on admission was 38.4 degrees Centigrade. The average pulse rate was 96 per minute. Average white cell count was 16.6 thousand.

On physical examination all but two had severe generalized or lower abdominal tenderness with spasm and rebound tenderness. Seven of the twelve had rectal pain while three had palpable masses which were thought to represent abscess formation. Proctoscopy was done on five patients and in three instances definite spasm was found. Two patients were completely obstructed while three were thought to have partial obstruction.

All 12 patients were subjected to surgery within 48 hours. Five had an exploratory laparotomy with drainage, of which two required a colostomy later, one two days later and the other 12 days later. These were for evidence of continued active inflammatory process. On the remaining seven patients a transverse colostomy was performed as a primary procedure. In each case there was severe inflammatory reaction in the region of the sigmoid. Though all of the patients had some purulent peritoneal exudate, in only one instance was there a frank perforation of the sigmoid. This was plicated.

All of the group received chemotherapy and/or antibiotics postoperatively, penicillin, intravenous sulfadiazine and streptomycin being the substance of choice. Complications were limited to two wound infections and one pulmonary infarction without clinical evidence of thrombophlebitis. This latter patient also developed a mass in the left lower quadrant despite a colostomy and intensive antibiotic therapy. The abscess was drained. There was one postoperative death, a 60 year old lady who was desperately ill at the time of operation. Her postoperative course was one of uncontrolled sepsis and she died on the eleventh postoperative day.

Thus, nine patients had colostomies with one fatality; the remaining three had exploratory laparotomy with drainage only. Of the eight patients with colostomies who survived, six underwent resection of the inflamed segment of bowel at a later date, after clinical and laboratory evidence indicated that the inflammation had subsided. The average length of time between colostomy and resection was three and a half months. One month after sigmoid resection one patient developed severe nausea and vomiting with abdominal pain and expired on the 37th postoperative day. At autopsy a thrombosis of the superior mesenteric artery with ischemia necrosis of the small bowel was found. There was no evi-

dent etiological factor to explain the thrombosis. This was the only complication following resection.

Four of the colostomies were closed after resection and two were closed without resection. These last two patients were reluctant to have a resection done and we were willing to have them forego it on a trial basis inasmuch as they both had cessation of inflammation and a limited number of diverticula.

We have been able to follow nine of these patients postoperatively. Eight have done well and are asymptomatic to the present time. One has developed a postoperative ventral hernia at the site of the colostomy closure but has had no large bowel symptoms. The only poor result is an elderly lady with a colostomy who, despite resection, continues to have lower abdominal pain, yet does not wish further surgery.

GROUP IV—DIVERTICULITIS TREATED WITH ELECTIVE SURGERY

Twenty-nine of the 102 patients were classed as nonurgent as far as surgery for their acute diverticulitis was concerned. Eighteen of this group were men, 11 were women. Their average age was 55.8 years. The youngest in the group was 32, the two oldest were 71.

Nineteen (65.5 per cent) had chronic symptoms for over a month prior to admission. With ten the complaint was abdominal pain, while six had urinary complaints. Two of these latter had cloudy urine, three had pneumaturia and one had urgency and frequency. Four patients complained of rectal bleeding, three had active fecal fistulae, two complained of constipation, one had diarrhea.

Sixteen in the group developed acute symptoms suddenly or had a severe exacerbation of their chronic symptoms less than a month prior to admission. One patient developed an acute episode of diverticulitis while hospitalized for a hernioplasty. Twelve had abdominal pain, two had rectal bleeding, two had dysuria and pyria, another had diarrhea, and one noted an increase in drainage from an old fecal fistula. Eight of the patients (27.6 per cent) showed a significant weight loss. Five gave a history of diarrhea, while eight had noted occasional blood in their stools. Eight complained of chronic constipation. Average temperature on admission was 37.3 degrees Centigrade. Pulse and respiration rates were not significantly elevated. The average white blood cell count was 11 thousand on admission. On physical examination 22 patients showed varying degrees of abdominal tenderness on palpation, eight had rectal tenderness and nine had palpable inflammatory masses. Six had positive guaiac stools. Proctoscopy was done in 20 instances. Two patients were found to have rectal polyps while two others had lesions which were possibly carcinoma. One had a fistula at 4½ inches, 7 had spasm or constriction of the rectosigmoid. Clinical and x-ray examination showed five to have partial large bowel obstruction and one patient had possible obstruction of the small bowel. Though many of the patients had diverticula in other portions of the bowel, inflammation was limited to the sigmoid. X-ray

examinations were suggestive of carcinoma in four patients, and demonstrated sigmoid-vesical fistula in two, a sigmoid-abdominal fecal fistula and three other sigmoidal fistulae without specific involvement of adjacent organs.

As their primary procedure, 15 of the patients had a transverse colostomy, one had a sigmoid resection and transverse colostomy, six had primary sigmoid resections, two had exploratory laparotomy with drainage of pelvic abscesses, one patient had a left hemicolectomy, one had a sigmoid resection and excision of a fecal fistula, one had an exploratory laparotomy with revision of sigmoidostomy, one had a sigmoid resection with excision of a vesico-sigmoid fistula, and one patient had an exploratory laparotomy with resection of a small part of the bladder.

There were seven postoperative complications in this group following the primary procedure. All but one occurred after transverse colostomy. Three patients developed fecal fistulae, one a wound infection, one had a pulmonary infarct without evidence of thrombophlebitis, one had urinary retention which required a transurethral resection of the prostate, and one had temporary agranulocytosis. There were no postoperative deaths in this group.

Seventeen of the patients had secondary procedures carried out. Five had sigmoid resection, four had their colostomy closed, two had resection of the sigmoid with excision of sigmoid-vesical fistulae, one had a resection of an entero-vesicle fistula, one had a colostomy, one a resection of the sigmoid with excision of a fecal fistula, one had an exploratory laparotomy, and one had a resection of the sigmoid with excision of a vesico-sigmoid fistula and a fecal fistula. Postoperative complications were limited to one patient who had a minor cerebrovascular accident and a parotitis following her second operation, but she recovered without sequelae.

Ten patients had a third procedure following the first two. Nine had their colostomy closed, while one had a sigmoid resection. Postoperatively one patient developed a wound infection, another had a perforation of the large bowel following colostomy closure. This necessitated another colostomy but it was eventually reclosed without event.

Two patients required four procedures, closure of colostomy for one and, as just mentioned, a second colostomy for the other because of the bowel perforating following primary colostomy closure. Neither of these two patients had postoperative complications after their fourth procedure. The last patient had a second colostomy closure eventually, making him the only patient of the group to have five procedures. His fifth postoperative period was without event.

Only one patient in this group of 29 was completely lost to follow-up. One patient is known to have died elsewhere of an unknown cause and one died four months after operation of cirrhosis with bleeding from esophageal varices. Nineteen (73 per cent) of the remaining 26 have since had no complaints. The remaining seven have been only fairly well.

COMMENT

The vague nature of complaints that are due to diverticulitis is exemplified by our first group of cases where it was diagnosed as an associated condition. Only 12 in this group of 30 patients had complaints directly referable to diverticulitis, the diagnosis being made by x-ray examination in all but one case. In the second group of 31 cases, on the other hand, all had symptoms referable to the inflammatory process, 27 or 87 per cent having abdominal pain. Combining these first two groups, we have 61 patients, or 59.8 per cent of the total who required no more than conservative treatment. If symptoms are severe, the patient is placed on nothing by mouth, parenteral fluids and antibiotics. As the process subsides, fluids by mouth may be given and intake then gradually increased to a low residue diet. Mineral oil is also included to keep the stools soft and movements regular. The majority of patients with diverticulitis can be handled in this way.

In general, emergency surgery is not required for acute diverticulitis except in a few cases. In our group, only 12, or 11.8 per cent, underwent surgery within 48 hours after their admission. A preoperative diagnosis of diverticulitis as the cause of peritonitis or bowel obstruction is not an easy one because there are usually no preceding symptoms referable to the large bowel. Only one of our patients had a prolonged history of intermittent constipation associated with lower abdominal pain and cramps. The average duration of symptoms was 3½ days.

If, because of the severity of the patient's signs and symptoms, an exploratory laparotomy is deemed advisable and a diagnosis of diverticulitis thereby established, we believe a transverse colostomy should be done at that time. Of the five patients who had an exploratory laparotomy with drainage, two had to have a transverse colostomy shortly thereafter. Diverting the fecal stream permits the inflammatory process to subside. Resection of the diseased portion of bowel is the ultimate aim, but to do so in the face of acute inflammation is hazardous and unjustified. By putting the distal segment at rest for a time, the resection may be undertaken at a later date with much less risk. Simple stab wound drainage does not provide adequate treatment for the primary process of the disease. If an abscess is found in the pelvis, it should be drained by lateral stab wounds, but the transverse colostomy should still be done.

Postoperatively, the patients are maintained on nothing by mouth, indwelling nasal-gastric tube suction, parenteral fluids, and antibiotics. Special attention is given to electrolyte and fluid balance during the immediate postoperative period. The colostomy is usually opened on the second to third day, depending on the degree of distention of the bowel. After opening the colostomy the gastric tube is removed and fluids are started by mouth. Colostomy irrigations are started on the seventh postoperative day in an effort to achieve early control

over the discharge. The antibiotics are continued for about ten days to two weeks postoperatively.

The length of time between colostomy and resection is an individual problem and must be determined by clinical and x-ray findings. Persistent elevation of temperature, and white cell count, and abdominal or rectal tenderness are all contraindications to resection. X-ray evidence of severe spasm is also a contraindication, but it is seldom necessary to wait for complete disappearance of bowel spasm before undertaking resection because vestiges of inflammation may remain for more than a year. Combining the findings from periodic clinical and x-ray examinations, a satisfactory time may be chosen for resection that is necessarily neither delayed after colostomy nor so early that that patient's welfare is jeopardized.

The fourth and last group which is classed as non-urgent operatively, requires sound surgical judgment on two points in particular. What are the indications for resection of the large bowel in the presence of diverticulitis and when should a preliminary colostomy be done prior to resection. We believe that obstruction, perforation, with or without abscess or fistula formation, severe pain, and questionable lesions that resemble carcinoma should all be treated surgically. Hemorrhage may require surgery, but the source of bleeding must be evaluated carefully in order to avoid continuation of bleeding after a resection that was intended to be curative. Once a resection has been deemed necessary, the patient is placed on large bowel preparation, consisting of a clear fluid diet and appropriate antibiotics. Purging is contraindicated for fear of causing acute exacerbation of the inflammatory process. Patients with colostomies who are being prepared for bowel resection are given gentle irrigations of the distal loop with saline or water in which aureomycin or terramycin has been added in order to facilitate adequate preparation of the bowel.

When a patient has any degree of large bowel obstruction, perforation or fistula formation, we believe that a colostomy is indicated as a primary procedure. If at the time resection is contemplated, whether as a primary or secondary procedure, there is still sufficient inflammation to render dissection and resection hazardous, then the procedure should be terminated and only a colostomy done if it has not been done before. Further time and preparation will reward the surgeon with a much easier resection, a better anastomosis and should be less dangerous to the patient.

As with the acute surgical cases the optimum time between complete diversion of the fecal stream by colostomy and elective resection varies with the degree of inflammation. Usually three to four months is a sufficient interval, although some cases may require as long as a year.

At the time of resection, should a vesicosigmoid fistula be excised, we close the bladder in two layers with catgut and place an indwelling Foley catheter in the bladder. Occasionally, when a large segment of the bladder is

removed, a suprapubic cystotomy tube is used in addition to the Foley catheter. This may usually be removed by the tenth postoperative day.

We have recently adopted a more radical procedure at the time of resection. X-rays commonly demonstrate the greatest degree of inflammation and predominance of diverticula to be in the region of the sigmoid. The descending colon may often have diverticula as well, which, though not acutely inflamed at this time, may become involved after the resection. For this reason we now resect both the sigmoid and a major portion of the descending colon. Mobilizing the splenic flexure may be tedious and may lengthen the procedure somewhat, but we believe that long-term follow-up studies will justify this policy. It has not increased the morbidity or mortality.

Following primary resection these patients are maintained on indwelling nasogastric tube suction, nothing by mouth, parenteral fluids and antibiotics until they begin to have active bowel sounds and expel flatus. At this time the tube is removed and oral fluids are begun. Since these patients are usually quite elderly, they do not tolerate electrolyte or fluid imbalance well. Therefore special attention is always directed at this problem. The diet is gradually advanced to a low-residue diet and mineral oil given to insure a soft stool. Antibiotics are usually discontinued by the seventh day after operation.

If a patient has had a preliminary colostomy, this may be closed from ten to twelve days after resection provided x-ray studies of the distal segment prove satisfactory. Postoperatively these patients are managed as a primary resection.

We have performed 85 procedures on 41 patients. There were two postoperative deaths, a mortality of 2.3 per cent. Both these fatalities occurred in the acute surgical emergency group. There were a total of 15 postoperative complications (Table III), an operative morbidity of 17.6 per cent.

TABLE III
POSTOPERATIVE COMPLICATIONS FOLLOWING SURGERY
FOR ACUTE DIVERTICULITIS
The New York Hospital 1947-1951

Wound infections	4
Fecal fistulae	3
Pulmonary infarction without thrombophlebitis	2
Pelvic abscess	1
Urinary retention	1
Agranulocytosis	1
Cerebrovascular accident	1
Parotitis	1
Bowel perforation	1
	<hr/> 15

Because of the recent nature of this study, our follow-up is incomplete and leaves much to be desired. Of the 35 patients followed postoperatively, however,

27 or 77.1 per cent, have done very well, while 8 or 22.9 per cent, have done only fairly well or poorly. We hope that the more radical resection now advocated will improve our results.

SUMMARY

A five year study is presented of 102 patients with diverticulitis on the surgical pavilions of The New York Hospital.

The series is divided into four groups: I. Diverticulitis as a secondary diagnosis. II. Diverticulitis treated by conservative measures. III. Diverticulitis requiring emergency surgery. IV. Diverticulitis treated by elective operation.

The method of diagnosis, treatment and results for each group is discussed.

CONCLUSIONS

Although many articles in the surgical literature stress the poor results from surgery for acute diverticulitis of the colon, recent experience, of which this report is a part, suggests that great progress is under way. Employment of a colostomy to divert the fecal stream, administration of antibiotic and chemotherapeutic substances, and other concurrent advances in surgical practice renders the operative treatment indicated for diverticulitis relatively safe and highly satisfactory.

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SURGERY OF THE GALLBLADDER*

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There is a group of patients suffering from diseases that require simultaneous or successive medical and surgical care. In the diabetic or the cardiac patient undergoing surgery the simultaneous care of the underlying disease is indispensable for the successful outcome of the unrelated surgical problem being operated upon. In peptic ulcer, ulcerative colitis, regional ileitis and gallbladder disease, medical care often precedes surgical care or is itself the only treatment needed.

There is a doctor called an internist and a doctor called a surgeon existing together in this, our specialized medical profession. When these meet at the bedside or the conference room or the lecture platform, a sly banter emerges between them, each implying in a playful sort of way that the other is more than a little biased by the training in his own technics. The internist hints that the surgeon is too eager to fit the case into an operative category. The surgeon thinks that the internist feels his duty well done if he has succeeded in keeping the patient out of the surgeon's clutches.

This light-hearted schism in thinking, however, has a serious overtone, since the advice the patient may get will be determined not by the state of his disease but by the state of mind or of training of his doctor. Only by a careful evaluation of the natural history of the disease from its incipency to its termination can one arrive at a reasonable decision in therapy. If each group of doctors sees the disease at a different time in its course, each is left with a different view on its treatment.

An example of such error arose in one of our hospitals where two men, interested in peripheral vascular disease, disagreed on the incidence of edema in patients with varicose veins. One was sure that it was very infrequent, the other felt it was quite usual. It finally turned out that the first man held his clinic at nine o'clock in the morning, and the other held his clinic at four o'clock in the afternoon, by which time the patients had been erect long enough to develop edema.

Do the surgeons see gallbladder disease in the afternoon or evening of its life when serious complications have converted what might have been a simple problem into a dangerous, critical and oftentimes, incurable disease? The answer to the development of a common language and a common understanding perhaps lies in the establishment of a team (rather than an individual) looking after a disease. Each, although specially trained in his own field, learns from the other; each learns to respect the other's knowledge, each sees the entire

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course of the disease. Instead of standing in full battle dress hurling their phalanges of statistics at each other, they develop a common goal and a unified approach for the achievement of that goal. Only then can the physician or the surgeon determine whether either method accomplishes its objective.

The area of disagreement by physicians and surgeons on the indications for surgery in gallbladder disease is not large. To delineate this area, a simple clinical classification of gallbladder disease may prove useful.

1. Gallstone colic with frequent attacks
2. Common duct stones
3. Acute obstructive cholecystitis
4. Chronic cholecystitis without stones
5. "Silent" stones
6. Stones with infrequent attacks under medical care.

Roughly speaking, 1, 2, and 3 would fall into the surgical group; 4 into the medical group; 5 and 6 into the controversial group. A detailed study of each category should lead us to fairly definite conclusions.

1. Gallstone Colic with frequent attacks:—There can be little disparity in thinking about this group. Delay in bringing these patients to surgery will usually result in the patients joining the consultation and playing a dominant role in the final decision.

What shall our advice to the patient be? Shall we say "This is benign disease. It is true that you may get other attacks but if you will adhere closely to your diet these will be less frequent. Duodenal drainage may help reduce the infection in your gallbladder. Antispasmodics and sedatives can be used to control the pain when the attack comes. Let us observe your course, we can always resort to surgery, let us keep that as a last resort".

What justification is there for this kind of advice? There is no proof that medical care has cured the disease. The patient is being offered a palliative method of treatment that may control his symptoms but have no affect on his disease. One may say, if he can tolerate an occasional attack; if he is not too apprehensive of the uncertainty of being struck down at unpredictable times, if his occupation is not too badly disrupted by the frequency of these attacks; if his social life flows smoothly requiring only an occasional departure from the dinner table, his own or his hostess', and an infrequent scurrying out of a theatre seat as he scrambles to safety before vomiting in his neighbor's lap; if his doctor is available at all hours of the night to come to his aid when the agonizing pain appears; if he is willing to remain within hailing distance of medical care at all times, thus depriving himself of country trips or ocean

voyages,—then the physician may consider his case a “controlled” case of gallstone disease.

The physician’s advice to follow this kind of life may find justification only if his disease were willing to play the game of remaining stationary while he “enjoys” this escape from surgery. The important point that is overlooked in this delay is the steady progress of his disease. A progress that in most instances leads to complications that may threaten his life, that make surgery a hazardous and often a critical undertaking. It leads to anatomical distortion which raises the surgical mortality twice and three times above that in the surgery for simple, uncomplicated gallstone surgery. It produces liver disease that makes the patient a difficultly controlled surgical risk.

Are these complications straw men that we surgeons set up to frighten our medical colleagues, or do we as surgeons see more of these “controlled” patients late in the life of their disease? Are we transmitting our own apprehensions of the surgical dangers introduced by delay? To delay surgery in this group seems, to a surgeon, unwarranted.

2. *Common duct stones*:—Since it is generally agreed that most stones are formed in the gallbladder, the appearance of a common duct stone should be considered a complication of previously existing gallbladder stones. The incidence of common duct stones may be taken as an index of the delay in bringing patients with gallbladder stones to surgery. Early surgery for uncomplicated gallstone disease could eradicate most of the problems that arise as the result of common duct invasion by stones. Obstruction leads to stasis, to ascending infection, to cholangitis and finally to true biliary cirrhosis if not relieved. Brought to surgery when jaundice has made its appearance, the patient becomes a more serious surgical risk. Opening the common duct adds to the morbidity and increases the mortality of surgery almost threefold. Trauma to the duct leads to later stricture and biliary obstructions.

The ingenious methods devised for the repair of common duct injuries and the bridging of strictures are tributes to the investigating minds and technical skill of the operating surgeons. Vein grafts and vitalium tubes are used to bridge gaps between open ends; anastomoses are made between stumps of ducts and the intestinal tract. Liver parenchyma is blindly punctured with the hope of uncovering a dilated intrahepatic duct that can be led into some portion of the intestinal tract directly or, failing that, it may be brought to the surface of the body for the creation of fistula which can later be implanted into the intestinal tract.

The multiplicity of methods is itself an admission of the fact that none is adequate. Dr. Allan Whipple once said after an evening’s report by various surgeons on the ingenious methods devised to overcome these difficulties, “If you will follow these cases long enough you will find the most brilliant of our

attempts have failed". All these death-dealing complications are dealt with by lifesaving measures which are, at best palliative and at worst, useless.

Again it should be emphasized that these details are presented not so much to acquaint you with their existence, but to point out that they appear as a direct result of long existing disease, or as the result of difficult and dangerous surgery required for the treatment of much too far advanced disease.

3. *Acute obstructive cholecystitis*:—The wealth of literature that has sprung up on the subject of the treatment of acute obstructive cholecystitis is an index of the importance it has assumed in the treatment of gallbladder disease. Two schools of thought champion the immediate versus the delayed operation. Our service resorts to prompt surgery if the patient's general conditions makes him a good operative risk. In the face of dehydration it is suggested that chemical and water balance be repaired and surgery instituted as soon as the patient is considered a safe surgical risk. The point stressed here is that acute obstructive cholecystitis appears after gallbladder disease has been known to exist for varying periods of time. Bockus states "The histologic picture indicates that in nearly every instance the acute process has been engrafted on a preexistent chronic inflammation". Rarely is it the opening symptom complex. If operation had been done at an earlier date this dangerous complication may have been completely avoided. The dangers inherent in the acute obstructive cholecystitis rests in the complications that may follow gangrene, empyema, perforation with diffuse peritonitis or the development of a localized pericholecystic abscess or hepatic abscess.

Without going into the merits of the immediate versus the delayed operation for acute obstructive cholecystitis, the mortality figures, once this complication has occurred is anywhere from 3 to 10 times that for simple uncomplicated cholecystectomy.

4. *Chronic cholecystitis without stones*:—In this group there is general agreement that surgery offers doubtful cure. In this category falls that vague functional derangement associated with persistent right upper quadrant pain, with or without true colic and x-ray evidence of good filling and poor emptying. Carter has divided this group into the hypertonic and hypotonic varieties. The former is attributed to spasm of the sphincter of Oddi preventing emptying; the latter is attributed to poor gallbladder muscle tonus unable to empty itself against normal sphincter tone. Clinically these are difficult to differentiate. In the hypertonic case, an antispasmodic such as amyl nitrite releases the spasm of the sphincter permitting emptying. In the hypotonic case this fails. Differentiation would prove useful since in the hypotonic group cholecystectomy will relieve them of their symptoms. With increasing use of sphincterotomy as suggested by Mulholland and Doubillet cholecystectomy plus sphincterotomy should relieve the hypertonic group. If the physiological mechanisms can be worked out this previously medical group may find itself in the surgical lists.

5. "Silent" stones:—The most silent of these are the gallstones found at autopsy on death from unrelated disease. A review of the incidence of gallstones found at postmortem shows a range between 10 and 20 per cent. In the age group between 40 and 50 among females it reaches a little above 20 per cent. It is doubtful whether all of these cases had no symptoms of their stones during life, but it may be assumed that if they existed they were not severe. Obviously, if these figures reflect the incidence in the general population, one cannot suggest that one out of five women between 40-50 require surgery for gallstones. It leads one to the conclusion that some stones are truly silent, both symptomatically and, so far as progression of disease is concerned, pathologically.

That the autopsy findings are not too far removed from the figures in the general population is suggested by the report of E. D. Truesdale in a paper entitled "The Frequency and Future of Gallstones Believed to be Quiescent or Symptomless". (*Ann. Surg.* [Dec.] 1943). In the course of 500 laparotomies for other disease he discovered 50 stone-containing gallbladders (10 per cent). In none of these, being operated for other disease, had there been a notation on the history preoperatively that would suggest the presence of gallstones. Re-questioning after their presence was known elicited information that should have made their presence apparent, or at least suspected in several ways. Some were having digestive disturbances being attributed to the usually accepted scapegoats of indiscretion in diet, indigestion or other common causes. Some had had one or more typical attacks in the more or less remote past which had been forgotten until inquired about directly. Finally some were actually having gallbladder symptoms at the time, but these were erroneously attributed to or obscured by the surgical condition obviously present.

Of the fifty cases followed for from 9 to 20 years, one of the 50 went on to a gangrenous gallbladder. Six were immediately treated surgically; 12 sooner or later returned for removal of their gallbladders; 12 were lost from observation; 8 died of other causes and 12 remained under observation without surgery. Only two of these 12 are presented as presumably examples of symptomless gallstones. This is a unique collection of cases in that all were discovered by palpation in the abdomen done as a routine with no previous knowledge of the existence of gallstones. The follow-up permits the conclusion that in gallstone disease, silent gallstones are whistling in supersonic tones. We should learn to hear them.

6. *Stones with infrequent attacks under medical care:*—It is in this group where the physician and surgeon may find their greatest area of disagreement. A patient may have had an attack of gallstone colic ten years earlier, and, in the intervening years, suffered relatively little. She is willing to suffer the two or three attacks a year, willing to remain on a restricted diet and carry on her activities. It is in this group that the benignity of the symptomatology may not parallel the progress of pathology. Some of these patients come to surgery with the complications of common duct stone or acute obstructive cholecystitis,

complications they may have avoided if operated upon as elective cases even though their symptoms were not severe.

Two sequelae, both infrequent, deserve mention. The first is the occasional spontaneous cholecystenterostomy through which a stone finds its way into the intestinal tract producing gallstone ileus with all the dangers associated with acute intestinal obstruction. The second known fact is, that carcinoma of the gallbladder is almost always associated with stones. It should not be considered an indication for advising cholecystectomy. Yet, since there are other cogent reasons for surgery, the incidence of gallbladder carcinoma may be reduced by cholecystectomy in these cases.

TABLE I

Name	No. of cases	Overall mortality %	Common duct stones %	Acute obstructive cholecystitis	Error (Normal bladder)
Lahey 1932	1210	4	13.3		
Adams (Lahey Cl.) 1947	1104 10% secondary	0.9		3.6	.58 6 cases
Snodgrass (Rock County) 1950	891	6.7			7 23 cases
Sanders		3.1	6.5		
Hooker	165		9		
Bockus (collected)		2.3	7	Under 48 hours — 2.7 Over 48 hours — 10.8	

Diagnosis is rarely a difficult problem. A careful history, x-ray studies, and duodenal drainage for the demonstration of cholesterol or calcium bilirubin crystals will usually make the diagnosis. Cholecystography proves correct in over 95 per cent of the cases. Occasionally reflex vasomotor affects predominate over pain in the attack of gallstone colic, and the anginoid syndrome sometimes proves a disturbing factor in the differential diagnosis. As a general thing, however, the diagnosis can be clearly established.

Surgery has been spoken of as though it were a completely safe and completely sure cure. The dangers of medical therapy long continued have been mentioned. What are the dangers of surgery? What is its promise of cure? At what price can the patient purchase freedom from his disease? At the dangers involved in cholecystectomy for simple uncomplicated disease. With our present improvements in anesthesia, our better understanding of fluid and mineral

replacement, and the reduction of pulmonary complications and local wound infections by the use of antibiotics, such surgery carries a minimal hazard even in the poor risk patient. The cardiac, the hypertensive, the diabetic can be well prepared and operated with safety. The greater danger in gallbladder surgery, is the mountainously obese patient. Such a patient might better be permitted to suffer her disease and its possible complications until weight reduction brings her back to human proportions. This danger in the obese is not limited to the group of gallbladder disease alone, it is true in all surgery. Obesity and gallbladder disease are such close companions that it is well to recognize the need of weight reduction in this group.

Surgery for uncomplicated gallstone disease carries a low morbidity and an extremely low mortality. Ralph Adams (1947) reports a series of 1,100 cases with a total mortality of .9 per cent. Of these 114 or about 10 per cent were secondary cases previously operated for gallbladder disease. Fifty-five patients had acute obstructive cholecystitis with a mortality of 3.6 per cent, four times the general group in which they were included. There were 6 normal gallbladders removed in the 1,100 cases showing how small is the percentage of important error, .58 per cent. If the previously operated cases, the acute obstructive cases and the cases requiring common duct exploration were excluded, leaving the purely uncomplicated gallstone cases, the mortality rate would have been well below .9 per cent.

Surgery in early gallbladder disease should not be presented as a completely innocuous, curative procedure available to any sufferer of gallbladder disease. No laparotomy is an innocuous procedure, but one that carries a mortality of less than 1 per cent is among the best achieved in major surgery. It should be pointed out that this figure is not obtained in all parts of the country where surgery is done. The figure quoted is from one of the good clinics. Let us compare this figure with that published by T. J. Snodgrass [*Arch. Surg.* 61:199 (Aug.) 1950] on the results of surgery for gallbladder disease in Rock County, Wisconsin. This includes all the cases in Rock County over a period of years. It is the work of 40 different surgeons, some of whom are general practitioners doing the surgery on their own medical patients. The series consists of 891 cases with 60 deaths, a rate of 6.7 per cent. (Seven times the mortality published by Ralph Adams). In part of this group consisting of 329 cases there were 23 normal gallbladders removed (7 per cent) and the author artlessly remarks "Nine of these were from one surgeon". In Adams' 1,104 cases 6 normal gallbladders were removed, an error of .58 per cent. The errors in the Snodgrass group was 13 times as great.

These figures are quoted as evidence of difference in surgical competence in various parts of the country. The Snodgrass figures are probably representative of surgery away from the larger medical centers. The reasonableness of insisting that surgery be done by men competent in surgery cannot be denied. The one surgeon who contributed one-third of the errors in a group of 40

operators should be given a course in either diagnosis or ethics or both. Transportation being what it is today elective surgery such as that under discussion should find itself under the care of competent surgeons in well equipped institutions. It seems indefensible that any group of patients should be subjected to an error rate 13 times as great and a mortality rate seven times that obtainable in other hands. These figures are quoted to point out that where adequate surgery is not available the medical man must temper his judgment accordingly, but it is our duty to make excellent surgery available in all parts of the country. Under adequate care simple cholecystectomy may be considered among the very safe surgical procedures.

Granted survival from the operative procedure, what is the cure rate in cholecystectomy? The cure ranges between 80 and 90 per cent. Where do our failures lie in the remaining 10-20 per cent?

First there is inflammation of a cystic duct stump left too long at operation. This may harbor infection, may be left with a stone in it, or with time may dilate into a miniature gallbladder. This complication is becoming less frequent with improvement in surgical technic. In past years subtotal cholecystectomy through Hartman's pouch was not an unusual procedure in cholecystectomy. This may have been done because of the advanced disease encountered and the timidity of surgeons to attack an area of inflammation and fibrosis in search of the cystic artery or junction of cystic duct with common duct. In early disease the dissection is simple, the structures easily identified and cystic duct stumps are rarely left behind.

Secondly there are overlooked common duct stones that require reoperating for removal. Cholangiograms on the table will lower this surgical error. Our thesis is that early surgery will bring patients to the operating table before stones appear in the common duct. This is a preventable cause of failure.

Thirdly, there is that vaguely named, and equally vaguely understood term, biliary dyssynergia. The symptoms are those of return of pain similar to and sometimes even more severe than those which preceded cholecystectomy. This syndrome may follow the simplest of cholecystectomies done in the earliest phases of the disease. Its etiology is not known. The usual functional explanation attributes the attacks to spasm of the sphincter of Oddi raising pressure in the common duct which preoperatively the gallbladder could absorb. With back pressure there may be reflux into the pancreatic duct adding the symptoms of a pancreatitis to further complicate an already adequately complex problem. Its treatment is unsatisfactory. It is said to have a psychosomatic background. Smooth muscle dilator drugs, are sometimes effective in relieving the attack of pain. (Amyl nitrite and Banthine have been used). Shingleton reports paralysis of the sphincter of Oddi by vagotomy or celiac ganglionectomy. Mulholland and Doubillet have devised a method of cutting the sphincter of Oddi and have reported satisfactory results in their group of cases.

CONCLUSION

Gallstone disease is primarily a surgical disease and should be so treated. Gallstones should be removed by cholecystectomy when they become symptomatically recognizable.

The vigor with which this principle is adhered to will be recognizable by the diminution in the number of gallstone patients who come with common duct stones with or without jaundice, or with already existing hepatic disease due to ascending cholangitis following obstruction, or with acute obstructive cholecystitis. These are late complications in the vast majority of cases. They are preventable. Early surgery will eliminate most of these complications and their incidence may be taken as an index of undue delay in gallstone surgery.

The cost of surgery is sometimes brought up as a deterring factor. It should play no part in the decision. It would be unthinkable in a country such as ours that a patient be denied the best care merely because he could not afford it. Our municipal hospitals and wards in voluntary hospitals are always open to this group of patients.

It is time to eliminate that schism in thinking which exists between one man called "medical" and the other called "surgical". The sum of their combined opinions is much more valuable to the patient than the brilliance with which each supports his own.

DISCUSSION

Dr. I. Snapper:—The same women I examined thirty years ago in Europe with gallstones, who without operation and perhaps thanks to my quackeries, had a tolerable life, now are suffering from empyemas of the gallbladder, perforation of the gallbladder and a few even from carcinoma of the gallbladder. I am therefore willing to agree with Dr. Standard, that patients with gallstones demonstrated by x-ray, or patients with a non-visualizing gallbladder and complaints, must be operated on.

I have to make an exception for patients above 50 years. When an *older* person without too many complaints consults me about his gallstones and surgery has to be discussed, I always say that a cholecystectomy is not too dangerous. I add that of twenty patients in the age group of the patient, nineteen are better afterwards. The patient always asks, "What happens to the twentieth?" and my answer is "He goes to Dr. Klemperer". This usually quenches the patient's desire for surgery.

Question:—What is the possibility of passing a common duct stone?

Dr. Standard:—There is fair evidence to show that stones are passed through the common duct. The evidence is usually indirect but quite significant. One third of the patients who come to surgery with a past history of jaundice show

no common duct stone, and at operation show no acute disease and no aftermath of acute disease to suggest that it might have been due to edema about the duct. Stones have been demonstrated in the feces following an attack of jaundice. Stones demonstrated by postoperative cholangiography and not removed have been found to produce no jaundice postoperatively. This is not definite evidence that they have been passed because occasionally a stone will find its way into a side pocket or diverticulum of the duodenum away from the channel of bile flow, or common duct dilatation sometimes permits flow around a stone.

Question:—In hypertonic sphincter, why not do a cholecystojejunostomy instead of a cholecystectomy and sphincterotomy?

Dr. Standard:—This is a perfectly reasonable question. I would say that any anastomosis of the gallbladder to the intestinal tract lays the gallbladder and biliary system open to ascending infection. Flat plates of the abdomen taken postoperatively often show air in the biliary radicles as proof that intestinal contents too may find their way into the liver radicles. A section of the sphincter leaves a narrow lumen through which such infection is less likely to occur. It does, however, happen. Barium meal done on one of my patients following a sphincterotomy showed barium in the liver radicles. From the standpoint of decompressing a common bile duct due to sphincter spasm, the cholecystenterostomy or the choledochenterostomy should be as effective as the sphincterotomy.

The question about the likelihood of stones arising in the common duct can, I believe, be answered in the affirmative. In the presence of a gallbladder with stones in the duct one cannot say where they arose and the likelihood is that they arose in the gallbladder. Following cholecystectomy patients have been known to be symptom-free for many years and to return with jaundice due to a common duct stone. With a long hiatus of time intervening it is fair to assume that the stone formed in the common duct.

The absence of the gallbladder, however, alters the physiological function of the common duct. The question therefore as to whether stones occur in the common duct in the presence of the gallbladder cannot be answered. We have had one case of a congenital absence of the gallbladder with a common duct almost 1 inch in diameter containing many stones. This patient had been previously operated 15 years earlier by Dr. Alan Whipple for the same findings. Here again the gallbladder was absent.

Some light has been shed by Dr. John Sutton on the anatomical changes of the duct epithelium following cholecystectomy in the dog. The usual cuboidal or low columnar epithelium undergoes a change in the direction of the epithelium usually found in the bladder. That is, it takes on the high fronded complex vilous epithelium that is normal for the gallbladder. It may be interpreted that

the duct system is assuming the function of the gallbladder in its absence but there is no corroborative evidence for this in the human.

Dr. Snapper deplors the triad of scars on the abdomen of American women, namely the suprapubic scar of a hysterectomy, the oblique scar of an appendectomy and the right rectus scar of a cholecystectomy. He points out that in China he saw little of these embellishments. There may be an underlying metabolic difference in the incidence of gallbladder disease in China as against its occurrence in this country. It would, however, be my impression, knowing nothing about China except its primitive kind of existence among the general population and the shortage of medical care, that these women perhaps live without scars but live in pain from their existing disease or die of its complications.

The indications for cholecystectomy have been gone over and if an occasional gallbladder is taken out by error it must be accepted as one of the hazards of diagnosis. We are not discussing here the indiscriminate, careless, laparotomies done without justification or in untrained hands, or without adequate facilities for good surgical care. With the kind of anesthesia available now, the ease of transportation throughout the country, even the most remote areas have accessible to them well established institutions for surgical care.

THE CLINICAL MANIFESTATIONS OF CHRONIC AMEBIASIS*

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The purpose of this presentation is to point out that gastroenterological internists are in a position to perform a great service to the community in helping to eliminate, or at least to alleviate, an important public health problem. Numerous surveys have established the fact that the incidence of intestinal infection with *Endameba histolytica* is high in the United States. Craig¹ and Faust² considered it a conservative estimate that 10 to 20 per cent of our people are infected. Many physicians still regard amebiasis as a tropical or subtropical disease despite the known high incidence of this infection in the northern part of the United States. Although Sapero and Johnson³ discovered in 1939 that 7.8 per cent of apparently healthy naval recruits from northern states harbored *E. histolytica* in their intestinal tracts, a general awareness of the prevalence of amebiasis in the New York area was not realized until after World War II. More recently, a study by Towse et al⁴ in the Albany (New York) area showed a 9.7 per cent incidence in a group of 350 persons; and Shookhoff⁵ in a routine survey of a group of 260 veterans who returned to New York City after overseas service, found that more than 10 per cent were infected with *E. histolytica*. Some of those infected had no symptoms and many had poorly defined symptoms of such a minor nature that they would not normally seek medical assistance. Those patients with an amebic infection who are asymptomatic are often referred to as healthy "carriers". A study by Faust⁶ of the intestinal tracts of 202 individuals accidentally killed, casts considerable doubt on the existence of a perfectly healthy carrier state. Evidence of infection with *E. histolytica* was found in 13 cases, seven of which showed typical but superficial amebic lesions. No one can tell when a carrier, through lowered resistance, may develop clinical symptoms or even the serious complication of amebic liver abscess, which often occurs in patients who have had no previous diarrhea or other symptoms suggestive of amebiasis. Hence it is incumbent upon us to discover and treat these seemingly healthy carriers, as well as those persons who have mild symptoms, not only to prevent the possible development in them of an incapacitating or even fatal illness, but also in order to eliminate a reservoir of infection in the community.

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To discover these cases, a high index of suspicion is the first essential. What symptoms and what objective findings should lead us to suspect intestinal amebiasis? To answer this question, we have reviewed the records of 182 patients seen in the senior author's office practice and of 22 patients studied on the wards of the hospital, all of whom had a warm stool specimen obtained after a saline purge examined by an expert parasitologist, and were found to have an infection with *E. histolytica*. The patients ranged in age from 10 to 69 years and there was a slight preponderance of males over females. Ninety-three patients had at some time resided in or traveled to a tropical or subtropical area. Six of these had done so as members of the Armed Services. The remaining 111 patients had never been out of the New York or New England area. The cases seen at the office were all referred for investigation of symptoms referable to the gastrointestinal tract. It is our practice to order a stool examination of all patients with abdominal or other suggestive complaints whose etiology cannot be discovered after the usual general and special examinations. This has been very rewarding inasmuch as the finding and elimination of an amebic infection of the intestinal tract has often resulted in a cure of the symptoms of patients who had previously been diagnosed as having a psychoneurosis, an irritable colon or other functional or psychosomatic states. In regard to those individuals previously considered psychoneurotics, Mackie⁷ offers a most interesting comment: "so common has this been in our experience that we have come to regard the diagnosis of psychoneurosis, when accompanied by chronic abdominal symptoms, atypical of the common pathological entities, as almost pathognomonic of infection with *Endameba histolytica*. Prompt and dramatic results followed specific therapy".

The following table summarizes the subjective complaints encountered in the 204 patients here reported who were found to have an *Endameba histolytica* infection of the intestinal tract:

TABLE I

1. Change of bowel habits	146
a) Diarrhea	92
b) Constipation	39
c) Alternating Constipation and Diarrhea	15
2. Abdominal Pain	108
a) Diffuse Lower	42
b) Right Lower	29
c) Left Lower	17
d) Epigastric	16
e) Right Upper	12
f) Periumbilical	6
3. Tenesmus	53
4. Flatulence and Abdominal Distention	47
5. Blood and/or Mucus in Stools	52
6. Fatigue	37
7. Weight Loss	26
8. Joint Pains	22
9. Headache	10

It will be noted that of the 204 patients, only 146 had any complaint referable to a deviation from normal bowel habits, and that only 107 had diarrhea. Two cases of acute amebic dysentery are excluded from this series. None of the patients here reported had dysentery in the true sense and it is important to emphasize that amebic dysentery is not synonymous with intestinal amebiasis, that dysentery is a rare occurrence in amebiasis in the temperate zones except in epidemics resulting from heavy infections due to pollution of a drinking water supply. Dysentery is so unusual in amebiasis that it may almost be considered a complication. The diarrhea of all of the patients in this series was of a minor nature, sometimes only an incident remembered as having occurred several months or years previously but nevertheless furnishing a clue to the diagnosis. At times the diarrhea takes the form of intolerance to alcohol or fats or other foods, the ingestion of which results in a day or two of multiple stools with or without abdominal pain or the passage of mucus and blood. Prolonged periods of diarrhea are rarely encountered. Eleven of these patients had previously been studied by other clinicians and had been told that they had "spastic colitis" or an irritable colon. Their symptoms were promptly relieved by specific therapy. In 15 patients, constipation marked the period intervening between episodes of diarrhea. A word of caution is in order here. In a patient who complains of a change in bowel habits, one cannot discontinue further diagnostic examinations upon finding an infection with *E. histolytica*. Four patients are not included in this report, who were found to have a carcinoma of the large bowel, one in the rectum and three in the sigmoid, in addition to the *E. histolytica* infection. It has been our practice to perform sigmoidoscopy and a barium enema x-ray and small intestinal studies when indicated, in all patients before the stools are investigated. Thirty-nine patients complained of constipation varying from slight to severe. Fifty-eight patients, on careful questioning, did not offer any complaints at all with reference to the regularity of the bowel evacuations. The 97 patients with either constipation or no change in bowel habits lend emphasis to the fact that if only the stools of patients with diarrhea are examined many cases of amebiasis will be overlooked.

Abdominal pain was present in 108 patients, in one or more locations as enumerated in Table I. Those who complained of diffuse lower abdominal pain rarely described a severe type of discomfort but rather a sense of soreness or a "heavy uncomfortable feeling", often following a normal or loose bowel evacuation. The 29 patients with right lower quadrant pain form an interesting group. In ten cases, the pain had at some time been severe enough to cause a diagnosis of appendicitis, either acute or "chronic recurrent", to be made. Four of these patients had had a previous appendectomy without relief of their symptoms. Six had, shortly before they came under our observation, been admitted to a hospital with a diagnosis of acute appendicitis. Because of prompt subsidence of the right lower quadrant pain, absence of leucocytosis and muscle spasm, although tenderness was present, surgery was not performed and they were referred for investigation. In all ten of these cases, right lower quadrant pain did not recur

after specific antiamebic therapy. Having had this experience, it has become our rule, knowing how frequently a single stool specimen will not reveal an infection with *E. histolytica*, to treat all patients with recurrent episodes of right lower quadrant pain, not otherwise explained, with antiamebic drugs, even if stools are negative, especially if barium enema reveals cecal spasm or a conical, serrated cecum. Four patients so treated were relieved of right lower quadrant pain. The following case is cited as an example:

A 52 year old white male had had attacks of right lower quadrant pain without nausea, vomiting or fever for three years. He had never had diarrhea or blood in his stools. Six months prior to coming under our care in June 1948, he was in a hospital where all diagnostic examinations including urological investigation were negative. He returned to Norfolk, Va., where he had formerly lived and was again hospitalized there. Stools were examined for ova and parasites and were found to be negative. A laparotomy was performed and a normal appendix was removed. On his return to New York, his pain recurred and he was referred to one of us (M.W.). Barium enema revealed a conical cecum which was slightly spastic and had irregular edges. A purged stool was again negative. A course of Diodoquin was prescribed. His right lower quadrant pain was relieved and has never recurred.

Epigastric and right upper quadrant pain occurred alone or together in 19 patients, only ten of whom gave evidence of amebic hepatitis in the form of low-grade fever, or tenderness and/or enlargement of the liver, limitation of motion of the right half of the diaphragm, and slight leucocytosis in three. In one patient without hepatitis the right upper quadrant pain was so severe as to lead to a suspicion of gallbladder disease although cholecystography later proved to be normal and episodes of pain were always associated with diarrhea. The attacks occurred at four to eight week intervals and incapacitated the patient for several days. Barium enema in this patient showed severe spasm of the hepatic flexure (Fig. 1a), and the stools were positive for *E. histolytica*. Four months after specific therapy all the symptoms were relieved and the spasm was no longer demonstrated on barium enema x-ray (Fig. 1b).

Tenesmus, present in 53 patients, usually was associated with intermittent diarrhea and varied from severe rectal pain and urgency to a sense of vague rectal discomfort, often described as a feeling that evacuation was not complete and leading to further but usually ineffectual efforts to pass additional stool.

Flatulence and abdominal distention was a symptom in 47 patients, in some of whom they were the only complaints. Distention frequently occurred soon after meals, and often was described as necessitating the loosening of clothes. One male patient with a duodenal ulcer, whose brother also had a duodenal ulcer, complained that his reaction to ulcer therapy differed from his brother's. Whereas the latter was entirely relieved of his distress by a bland diet and antacids and he himself was also relieved of his ulcer pain by such

measures, he was never completely comfortable but always had a heavy feeling in his abdomen, was bloated, flatulent and chronically fatigued. Discovery and elimination of an *E. histolytica* infection gave him complete relief. There were four other patients in this series who had a duodenal ulcer as well as chronic amebiasis.

Blood and mucus in the stools were observed by 52 patients. The passage of blood or mucus or both was rarely a presenting complaint, but rather one which was elicited on questioning. The amount of blood and mucus passed was

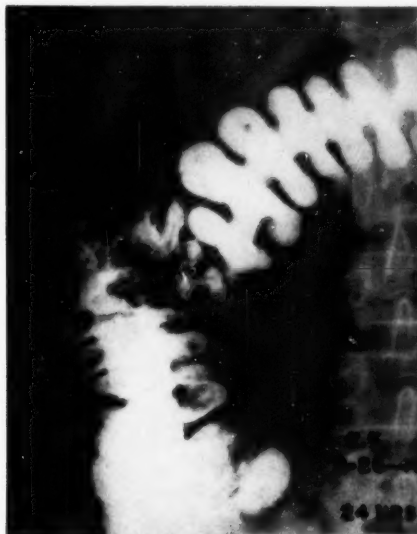


Fig. 1a

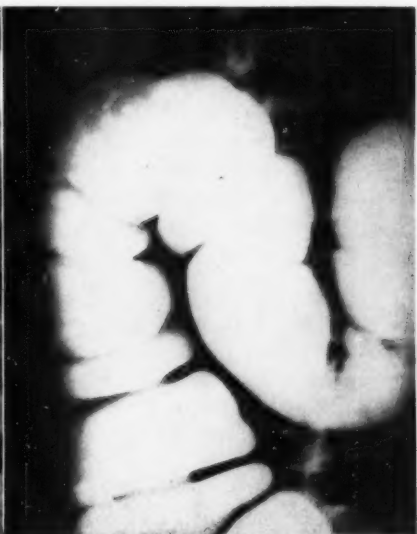


Fig. 1b

Fig. 1a—Persistent spasm of hepatic flexure in a patient with *Endameba histolytica* infection. Fig. 1b—Same case after antiamebic therapy.

small, often appearing as blood-tinged mucus frequently associated with tenesmus. In 11 patients who had not observed blood or mucus in their stools, they were noted during proctosigmoidoscopic examination. In only seven of the entire group of 204 patients, was there any change in the appearance of the rectal and sigmoid mucosa. Five had typical discrete ulcers in the rectosigmoid area and in two the mucosa was slightly congested and friable. It is obvious that in most instances the blood and mucus were coming from more proximal portions of the bowel.

Fatigue was present in 37 patients, in 11 of whom it was the only cause for their seeking medical advice. In five patients it was associated with a slight to moderate weight loss and anorexia, which caused referring physicians to suspect a gastrointestinal malignancy. After a careful search for the latter was concluded

with negative results, the stools of these patients were examined. Eradication of an *E. histolytica* infection resulted in a gratifying increase in energy and appetite. Easy fatigueability alone, in the absence of any other discoverable cause, should always raise the suspicion of amebiasis.

Joint and muscular pains were complained of by 22 patients, only two of whom had definite evidence of rheumatoid arthritis. The latter two were cured of their arthritis as well as of their abdominal complaints by antiamebic therapy. In view of the increasing number of reports^{8,9} of the association of rheumatoid arthritis with chronic intestinal amebiasis, it would seem desirable that warm purged stools be routinely examined for *Endameba histolytica* in the former condition.

Headache, anorexia, slight nausea, palpitation and vertigo were infrequently encountered, and are only mentioned because they seemed to be eliminated after specific therapy in several of the patients who complained of them. Seven of the patients in this series who had evidence of hepatitis, had a fever. One patient with an amebic granuloma of the cecum had fever for six days prior to therapy. Occasional cases of prolonged pyrexia due to intestinal amebiasis are reported in the literature.

Objective findings in this group of 204 patients with an *E. histolytica* infection were relatively infrequent. Six patients had a mild secondary anemia. It is interesting that both a mother and daughter who had an anemia were found to be infected and that specific therapy resulted in a gradual correction of the anemia and cure of the easy fatigueability of which they both complained. Twenty-one patients had tenderness in various parts of the abdomen. The patients who had evidence of hepatitis were tender in the right upper quadrant, and those with right lower quadrant pain usually exhibited some tenderness over this region, but never any muscle-guarding. A few patients had tenderness over the sigmoid colon.

Proctosigmoidoscopy has not, in our experience, been of great help in establishing the diagnosis. As already stated, only five patients had typical small discrete ulcers in the rectum or sigmoid. All of these patients had diarrhea which was not severe. Two patients had a mild hemorrhagic proctitis probably due to secondary infection.

Radiographic examination of the colon was frequently a valuable clue to diagnosis. In 28 patients, cecal abnormalities were noted. In only two of these were the changes severe enough to suggest the presence of an amebic granuloma. In the others, the cecum was noted in some to assume a conical shape, or to exhibit variable degrees of spasm, and to have outlines which were serrated. Marked incompetence of the ileocecal valve was found in only two cases. In three cases there was severe prolonged spasm at or below the hepatic flexure, and sigmoid spasm was noted in two cases. General spasticity of the colon was occasionally present. Follow-up radiographic studies could not be obtained in

many instances, but where they were done, the observed colonic changes were seen to have cleared after treatment.

In every case herein reported, one or more warm purged stool specimens were examined by a competent parasitologist. A single stool was examined in the great majority of the patients. Cysts alone of *E. histolytica* were reported in 21 instances, and in three cases *E. histolytica* was identified after culture of a previously apparently negative stool. In all the other cases active motile trophozoites were found on direct examination of the purged stool specimen. In general, cysts were found in patients who had difficulty in providing a liquid stool specimen after a saline purge. There was no discernible difference in the symptomatology of the "cyst-passers" and those who showed trophozoites. A pure

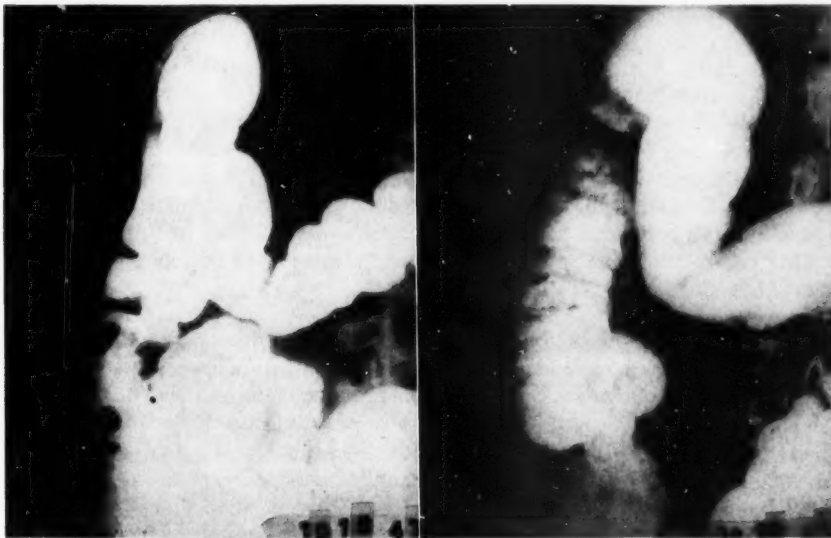


Fig. 2a

Fig. 2b

Fig. 2a—Spastic deformed cecum in a patient whose stools showed only *Endameba coli*.
Fig. 2b—Same patient after antiamoebic therapy.

infection with *Endameba histolytica* was found in only 41 cases. In the remainder of the patients, other organisms such as *Endameba coli*, *Endolimax nana* and *Iodameba butschlii* were found as concurrent and nonpathogenic infections. In 22 instances the *Dientameba fragilis* was found in association with *Endameba histolytica*. Most observers agree that while *Dientameba fragilis* is not invasive and does not produce extraintestinal lesions, its presence in the bowel results in symptoms. In this connection, a group of ten patients, not included in this series, in whom only *Dientameba fragilis* was found are interesting. As stated earlier, all patients studied had symptoms referable to the gastrointestinal tract.

After specific therapy, the complaints of the patients with *Dientameba fragilis* infection were relieved.

In addition, there were 36 office patients in whom *Endameba coli* or *Endolimax nana* were found but no *Endameba histolytica*. These patients had symptoms similar to those of the cases reported in this series. They were ambulant and it was often impractical to have repeated examinations of purged stools to rule out an *E. histolytica* infection. Many consider a minimum of nine stools necessary to exclude an *E. histolytica* infection, but it is obviously difficult to set up an arbitrary standard. Rather than subject these patients in whom only nonpathogenic amebae were demonstrated, to repeated purging, we have treated them with Diodoquin and in most instances have relieved them of their symptoms. A case in point is that of a 52 year old female cook who was referred by a surgeon whom she had consulted because she had been told she required an appendectomy. For six months she had been having recurrent episodes of right lower quadrant pain and frequent rectal discomfort. She had had no fever or nausea. There was tenderness in the right lower quadrant but no rigidity, and no masses were felt. Proctoscopy was negative. Barium enema revealed a deformed, conical cecum with serrated edges (Fig. 2a). A single purged stool specimen showed trophozoites of *Endameba coli*. She was treated with Diodoquin. Her stools became negative and in three years she has had no recurrence of her pain. The cecum subsequently appeared normal on radiological examination (Fig. 2b).

There are reports in the literature of severe involvement of the colon in amebiasis where multiple examinations of the stool were negative so that the diagnosis of amebiasis was only established after histological examination of an ameboma or at necropsy. Because of this, our attitude has been that whenever there is a clinical suspicion of amebiasis but negative stools, we have applied specific therapy, often with gratifying results. If a diagnosis of irritable colon or of "chronic recurrent appendicitis" has previously been made, or if there is abdominal distress or easy fatigueability or rectal tenesmus, without any discoverable cause, we have made it a rule to administer antiamebic therapy even in the presence of a negative stool before concluding that the symptoms are on a psychosomatic or functional basis. We believe that the known facts about the prevalence of amebiasis in our community and the frequent difficulty in obtaining confirmation of the diagnosis in proven cases lay a sound basis for the rationale of such a policy. Many therapeutic successes have convinced us of its value.

With regard to the value of the complement fixation test in amebiasis, our experience has been limited since we have commenced its use in the past few months, but we are in agreement with Shookhoff¹⁰ that "it cannot be used to diagnose intestinal amebiasis because it is negative in all such cases unless there is also hepatic involvement. Even when hepatic involvement is present, a nega-

tive test may be obtained. In other words, a negative result proves nothing, but a positive is usually significant, and points to hepatic involvement."

SUMMARY

1. The symptomatology and objective findings in a group of 204 patients with complaints of a chronic nature and a proven *Endameba histolytica* infection of the intestinal tract were analyzed.

2. Mild and occasional diarrhea, at times alternating with constipation, is the most frequent symptom. Constipation is not unusual.

3. Abdominal pain, variably located, and often simulating appendiceal pain, occurs.

4. Tenesmus, abdominal distention, flatulence, small amounts of blood and mucus in the stools, fatigue, weight loss and joint pains, occur in order of frequency.

5. Objective findings are more commonly observed during radiographic examination of the colon than by proctosigmoidoscopy.

6. Patients with suggestive symptoms who harbor nonpathogenic amebae or who have negative stools should be given a therapeutic trial of antiamebic drugs.

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DISCUSSION

Dr. I. Snapper:—Just like Dr. Weingarten, I too have seen a few cases of tropical liver abscesses caused by amebae, in patients who had never left this part of the world. As far as I know, however, this is a rare occurrence, except in patients who have had contact with victims of the notorious Chicago epidemic.

In this part of the world the *Endameba histolytica* hardly ever gives rise to the classical syndrome of dysentery with diarrhea, but leads usually to the treacherous syndromes so well described by Dr. Weingarten. Many ameba carriers complain only of fatigue or of joint pains. In such cases the complaints disappear after treatment of the amebiasis.

Nowadays it is easy to make amebic cultures from the stools and this has considerably increased the known number of patients with chronic amebiasis.

We certainly should appreciate Dr. Weingarten's presentation which so vividly reminds us that even in our temperate zone amebiasis—usually the chronic form—is a frequent disease.

Dr. Weingarten:—I wish to thank Dr. Snapper for his discussion and say that in all of these cases, in fact it has become routine in my office, when the patient's name and address are taken, the next thing is to ask whether he has ever been in the tropics, ever been in Florida, or in any other part of the world where he might have acquired an amebic parasite. So that in those patients who, I said, never left the New York area, that was determined after careful inquiry.

Dr. Snapper brings up a very important point about culture of the stools. In my paper I enumerate three patients in whom the stools were negative but amebae were found on culture. It isn't a common thing that when the direct examination is negative, the culture is positive, but it is definitely worth doing.

I must say that the question of treating patients who have a nonpathogenic ameba, or no ameba, deserves re-emphasis because there have been case reports in the literature where patients at operation or at autopsy have proven to have an ameboma, a histologically definite ameboma, or even acute amebic dysentery with necrotic mucosa, where during life the stools were persistently negative. I remember one case where a lesion of the transverse colon was removed. Twenty-four stools were examined before operation. The case was reported in *Gastroenterology*, and as stated there, the stool examinations were all negative, and yet this was a histologically proven amebic granuloma.

Now, if a patient has an *Endameba coli*, or an *Iodameba butschlii*, or *Dientameba fragilis*, then you know the patient has been somewhere where he might have gotten an *Endameba histolytica*, and, if he has symptoms, he should be treated. Also certain patients should be treated who don't have amebae but have clinical symptoms that are suggestive. You don't do any harm by giving Diodoquin, and if the symptoms were persistent and they are then relieved, it is a very gratifying thing, because, after all, that is our purpose, to cure patients.

EDITORIAL

ROY UPHAM, M.D., F.A.C.S.*

Members of the New York Chapter of the National Gastroenterological Association, friends and honored guests, I am greatly honored to be here with you tonight.

There are times and occasions when the most eloquent words fall short of expressing adequately one's feelings. This is such an occasion. We are gathered together to honor Dr. Roy Upham whom we all know and love dearly. Facetiously let me say, he is the greatest Secretary-General the National Gastroenterological Association has ever had. Of course he is the only Secretary-General we have had, but we have always cherished him.

Too often as physicians we forget what we owe to medicine. We have been educated in the richest tradition of a noble profession. The wisdom and science of generations of our predecessors have been given to us freely and we have garnered from their lives and experience all the wonderful technics and healing arts of the ages.

To me, Roy Upham is a living example of a physician who has not forgotten this obligation. He has served his profession well. He has contributed, in possibly greater measure than any of us here assembled, in time, energy and effort to repay medicine the debt we owe. He has been one of the founders of the National Gastroenterological Association, together with many other activities of which I am not qualified to speak.

There are certain qualities of Dr. Upham which have impressed me most and which I would like to comment on briefly. I shall say nothing of his talents as a toastmaster—his wide acquaintance as a world traveler—these are only too well known. In my association with him in the work of the National Gastroenterological Association one of his greatest qualities is his fidelity. No one could have been more faithful to an organization. He is faithful—when he has felt the course on which we were embarked was not to his liking. That is the supreme test of one's fidelity and Roy Upham has never faltered—never wavered. He has had one thought which he has consistently followed—whatever is best for our association—that he will do.

Another quality which I have come to appreciate and respect is his zeal. He has always been willing to further the cause of gastroenterology. He has, through his wide acquaintance of leading surgeons and medical men, always been in the forefront to suggest speakers for our programs and obtain the help of others in formulating progressive policies. He has traveled to all parts of this country and Latin America and succeeded in establishing chapters in the most

*Address by Dr. Sigurd W. Johnsen, President-elect of the National Gastroenterological Association, at a dinner in honor of Dr. Roy Upham, in New York City on 21 May 1953.

distant places. He is responsible for a tremendous expansion of our organization so that when the time came to leave our home and birthplace, New York City, the foundations for successful conventions elsewhere had already been laid. Time forbids any further elaboration of this quality—but suffice it to say—Roy Upham will forever live in our memories as the man who made it possible for the National Gastroenterological Association to really become a national organization.

Another quality of Roy Upham which I have learned to admire is his faith. Through the darkest days of the early phases of the expansion of our organization, when the outlook was bleak indeed—when financial deficits consumed a great deal of our time and thoughts, Roy Upham's faith in our organization and its ultimate success never faltered. He always knew we would succeed—we would develop into the organization with a great future, and so tonight we salute you Roy Upham—we extend to you our sincere thanks and offer to you our deep appreciation for what you have been to us, for what you are, and we hope that for many years to come we shall have the privilege and pleasure of your constant help and companionship.

Thank you.

NEWS NOTES

EIGHTEENTH ANNUAL CONVENTION

Copies of the program for our Eighteenth Annual Convention, which appears in this issue, are being mailed separately to members of the Association. Additional copies are available from the Headquarters Office, 1819 Broadway, New York 23, N. Y. and will also be available at the Registration desk on the Convention floor.

Among the outstanding topics to be presented are a "Symposium on Cirrhosis of the Liver" and two panel discussions, one on "Diseases of the Large Bowel", the other on "Latest Developments in Cancer Research".

There will be no Wednesday evening session in order that those attending the Convention may have an opportunity to enjoy the sights in and around Los Angeles.

LADIES AUXILIARY PROGRAM

The recently formed Ladies Auxiliary, under the chairmanship of Mrs. Felix Cunha of San Francisco, Calif., is planning an interesting and entertaining program for the ladies. A personal letter addressed to the ladies is being mailed out from the Headquarters Office with a business reply card requesting information concerning participation of the ladies in the various activities.

The tentative program for the ladies follows:

Monday, 12 October 1953

Registration at the Registration desk in the hotel from 8:30 A.M.

Business meeting of the Auxiliary at 4:30 P.M.

Convocation Ceremony, 6:00 P.M.

President's Annual Reception, 7:30 P.M.

(Tickets for the President's Reception will be given out only to those attending the Convocation Ceremony.)

Tuesday, 13 October 1953

Sightseeing tour of Hollywood and movie studios with lunch at Farmers Market leaving the hotel 9:00 A.M.

Annual Banquet, 7:00 P.M.

Wednesday, 14 October 1953

Luncheon and show in the famous Rendezvous Room of The Biltmore Hotel.

The cooperation of the ladies in returning the postcards immediately will aid the committee in making arrangements for these activities.

REGISTRATION

Registration for the Convention will take place on the Convention floor at The Biltmore Hotel. Those attending are requested to register and receive their identification badges as no one will be admitted to the exhibits or sessions without a badge.

SCIENTIFIC EXHIBITS

Scientific exhibits, which again are a part of the program, will be in the Exhibit Hall and will be on display from Monday afternoon through Friday morning.

ANNUAL MEETING OF THE NATIONAL EXECUTIVE COMMITTEE

The Annual Meeting of the National Executive Committee will be held at The Biltmore Hotel in Los Angeles, Calif. at 3:00 P.M. on Sunday afternoon, 11 October 1953.

ANNUAL MEETING OF THE NATIONAL COUNCIL

The Annual Meeting of the National Council of the National Gastroenterological Association will be held at The Biltmore Hotel in Los Angeles, California on Sunday afternoon 11 October 1953 at 4:30 P.M.

Following the meeting of the Council, there will be a banquet for the officers and members of the Council.

ANNUAL MEETING OF THE NATIONAL GASTROENTEROLOGICAL ASSOCIATION

The Annual Meeting of the National Gastroenterological Association will be held at The Biltmore Hotel in Los Angeles, Calif. at 4:45 P.M. on Monday, 12 October 1953, the first day of the Convention.

Members of the Association are requested to attend and participate in the business sessions.

Amendments to the Constitution and By-Laws and election of officers will be acted upon at this time.

Program

NATIONAL GASTROENTEROLOGICAL ASSOCIATION



**EIGHTEENTH ANNUAL CONVENTION
12, 13, 14 OCTOBER 1953
and
COURSE IN POSTGRADUATE GASTROENTEROLOGY
15, 16, 17 OCTOBER 1953**

**THE BILTMORE HOTEL
515 South Olive Street, Los Angeles, Calif.**

Members of the medical profession are cordially invited to attend the convention sessions.

Attendance at the Postgraduate Course is limited to those who have paid the matriculation fee.

OFFICERS and NATIONAL COUNCIL

Honorary President ANTHONY BASSLER, M.D. New York, N. Y.	FRANK J. BORRELLI, M. D. Tuckahoe, N. Y.
Past President WILLIAM W. LERMANN, M.D. Pittsburgh, Pa.	YVES CHAPUT, M.D. Montreal, Canada
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SAMUEL WEISS, M.D. New York, N. Y.	

REGISTRATION—All members and guests should register. Identification badges for admittance to meetings will be given to those who register. These should be worn at all times during the session. Registration will take place at the registration desk on the convention floor.

LADIES REGISTRATION—At the registration desk on the Convention Floor. Registration facilities will be open at 8:30 each morning. Information concerning the various activities and events will be available there.

MEETINGS are held on Pacific Standard Time and will begin promptly at the time specified.

COURSE IN POSTGRADUATE GASTROENTEROLOGY—Admittance only upon presentation of official matriculation card.

SCIENTIFIC EXHIBITS—Will be in the Exhibit Hall and will be open Monday at 1:30 p.m.; Tuesday, Wednesday and Thursday from 8:30 a.m. to 5:30 p.m.; Friday, 8:30 a.m. to 12:00 noon.

TECHNICAL EXHIBITS under the direction of Mr. Steven K. Herlitz. Exhibit Manager, will be open Monday at 1:30 p.m.; Tuesday, Wednesday and Thursday from 8:30 a.m. to 5:30 p.m.; Friday, 8:30 a.m. to 12:00 noon.

Those attending the Convention are urged to take advantage of the time in between the presentation of papers and sessions, to visit the technical exhibits and become acquainted with the many new products and new equipment on display.

PROGRAM

EIGHTEENTH ANNUAL CONVENTION NATIONAL GASTROENTEROLOGICAL ASSOCIATION

SCIENTIFIC SESSIONS
12, 13, 14 October 1953

and

COURSE IN POSTGRADUATE GASTROENTEROLOGY
15, 16, 17 October 1953

THE BILTMORE HOTEL

515 South Olive Street

Los Angeles, California

SPEAKERS AND OFFICERS OF INSTRUCTION

- ADLER, DENIS C., M.D., Assistant Professor of Radiology, College of Medical Evangelists, Los Angeles, Calif.
- BACHRACH, WILLIAM H., Ph.D., M.D., University of Southern California School of Medicine; Veterans Administration Hospital; Cedars of Lebanon Hospital, Los Angeles, Calif.
- BAILEY, WILBUR, M.D., Clinical Professor of Medicine, University of Southern California School of Medicine, Los Angeles, Calif.
- BAKER, HENRY, M.D., Clinical Professor of Medicine, Tufts Medical School; Visiting Physician, Boston City Hospital, Boston, Mass.
- BALFOUR, DONALD C., Jr., M.D., M.S., Assistant Clinical Professor of Medicine, University of Southern California School of Medicine; Los Angeles County, Good Samaritan and St. Vincents Hospitals; Good Hope Clinic, Los Angeles, Calif.
- BANK, JOSEPH, M.D., Good Samaritan, St. Joseph's, Memorial and County Hospitals; Consultant to Veterans Administration Hospitals, Whipple and Phoenix, Phoenix, Ariz.
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VISIT THE EXHIBITS

IV

- CHENEY, GARNETT, A.B., M.D., Clinical Professor of Medicine, Stanford University Medical School, San Francisco, Calif.
- COLLIER, CLARENCE R., M.D., Instructor in Medicine, College of Medical Evangelists, Los Angeles, Calif.
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VISIT THE EXHIBITS

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- SCHINDLER, RUDOLF, M.D., F.A.C.P., Clinical Professor of Medicine (Gastroenterology), College of Medical Evangelists, Los Angeles, Calif.

VISIT THE EXHIBITS

- SHAIKEN, JOSEPH, M.D., M.Sc., Associate Professor of Medicine, Marquette University Medical School; Chief, Department of Medicine, Milwaukee County Hospital; Director of Medical Education, Mt. Sinai Hospital, Milwaukee, Wisc.
- SLOAN, LEIGH E., M.D., Los Angeles County Hospital and Mercy Hospital, San Diego, Los Angeles, Calif.
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- ZAMCHECK, NORMAN, M.D., Instructor in Medicine, Harvard Medical School; Research Pathologist, Mallory Institute of Pathology; Research Associate in Pathology, Boston University School of Medicine, Boston, Mass.

BUSINESS SESSIONS

SUNDAY AFTERNOON, 11 OCTOBER 1953

- 3:00 P.M.
Executive Committee Meeting.
- 4:30 P.M.
National Council Meeting.
- 6:00 P.M.
National Council Banquet

SCIENTIFIC SESSIONS

FIRST SESSION

MONDAY MORNING, 12 OCTOBER 1953

FELIX CUNHA, M.D., President, National Gastroenterological Association, presiding.

9:00 A.M.

SYMPOSIUM ON CIRRHOSIS OF THE LIVER:

1. "Correlation Between Needle Biopsy of the Liver and Infra-red Photography of the Abdomen in Cirrhosis of the Liver".

Speakers

DR. I. R. JANKELSON, Boston, Mass.; DR. NORMAN ZAMCHECK, Boston, Mass. (By invitation) and DR. HENRY BAKER, Boston, Mass.

9:30 A.M.

2. "Clinical Aspects of Cirrhosis of the Liver".

Speaker

DR. JAMES A. HALSTED, Los Angeles, Calif. (By invitation) and DR. DAVID C. FAINER, Los Angeles, Calif. (By invitation).

10:00 A.M.

3. "Modern Treatment of Cirrhosis of the Liver".

Speaker

DR. LESTER M. MORRISON, Los Angeles, Calif.

VISIT THE EXHIBITS

VIII

10:30 A.M. Recess.

10:45 A.M.

4. "Pathologic Physiology of Cirrhosis of the Liver".

Speaker

DR. JULIUS BAUER, Los Angeles, Calif. (By invitation).

11:15 A.M.

Discussion to be opened by:

DR. SAMUEL WEISS, New York, N. Y.

11:30 A.M.

5. "Clinical and Biochemical Observations on the Use of Large Doses of Testosterone Propionate in Acute and Chronic Liver Disease".

Speakers

DR. FRANK M. MORGAN, Glendale, Calif. (By invitation); DR. GEORGE K. WHARTON, Los Angeles, Calif. (By invitation); DR. PAUL STARR, Los Angeles, Calif. (By invitation) and DR. ROBERT R. COMMONS, Los Angeles, Calif. (By invitation).

12:00 Noon

General Discussion.

SECOND SESSION

MONDAY AFTERNOON, 12 OCTOBER 1953

Exhibits will be open from 1:30 P.M. until closing.

JAMES T. NIX, M.D., Vice-President, National Gastroenterological Association, presiding.

2:00 P.M.

6 "Duodenal Stasis Caused by an Aberrant Superior Mesenteric Vessel".

Speakers

DR. BOSTON M. DAY, San Francisco, Calif. and DR. FELIX CUNHA, San Francisco, Calif.

VISIT THE EXHIBITS

2:30 P.M.

Discussion to be opened by:

DR. FELIX CUNHA, San Francisco, Calif.

2:40 P.M.

7. "The Detection of Colonic Lesions by Double Contrast and High-Voltage Radiography".

Speaker

DR. HENRY C. CROZIER, Los Angeles, Calif. (By invitation).

3:10 P.M.

Discussion to be opened by:

DR. BENJAMIN R. VAN ZWALENBURG, Grand Rapids, Mich.

3:20 P.M. Recess to visit the Commercial and Technical Exhibits.

3:50 P.M.

8. "Indications and Contraindications of Roentgen Examination in Bleeding Ulcers".

Speakers

DR. MARCY L. SUSSMAN, Phoenix, Ariz. (By invitation) and DR. JOSEPH BANK, Phoenix, Ariz. (By invitation).

4:20 P.M.

Discussion to be opened by:

DR. MAURICE FELDMAN, Baltimore, Md. (By invitation).

4:45 P.M.

ANNUAL MEETING OF THE ASSOCIATION—GENERAL ASSEMBLY.

6:00 P.M.

CONVOCATION: Presentation of certificates.

See special program.

7:30 P.M.

PRESIDENT'S ANNUAL RECEPTION—Sponsored by Winthrop-Stearns, Inc. (Admission by card only, to be obtained at the Convocation Ceremony).

VISIT THE EXHIBITS

THIRD SESSION

TUESDAY MORNING, 13 OCTOBER 1953

LYNN A. FERGUSON, M.D., Vice-President, National Gastroenterological Association, presiding.

9:00 A.M.

PANEL DISCUSSION ON DIAGNOSIS AND MANAGEMENT OF DISEASE OF THE LARGE BOWEL:

Moderator: DR. LYNN A. FERGUSON, Grand Rapids, Mich.

Participants: DR. BENJAMIN R. VAN ZWALENBURG, Grand Rapids, Mich.
DR. JAMES A. FERGUSON, Grand Rapids, Mich.
DR. EDWARD F. DUCEY, Ventura, Calif. (By invitation)

10:30 A.M. Recess to visit the Commercial and Technical Exhibits.

11:00 A.M.

9. "The Patient with Diarrhea".

Speaker

DR. JOSEPH SHAIKEN, Milwaukee, Wisc.

11:30 A.M.

Discussion to be opened by:

DR. WILLIAM Z. FRADKIN, Brooklyn, N. Y.

11:40 A.M.

10. "Newer Concepts and Therapy of Chronic Ulcerative Colitis".

Speaker

DR. F. GEORGE REBELL, Los Angeles, Calif. (By invitation).

12:10 P.M.

General Discussion.

VISIT THE EXHIBITS

FOURTH SESSION

TUESDAY AFTERNOON, 13 OCTOBER 1953

ARTHUR A. KIRCHNER, M.D., Vice-President, National Gastroenterological Association, presiding.

2:00 P.M.

PANEL DISCUSSION ON PEPTIC ULCER:

11. "Vagotomy—Pyloroplasty in the Treatment of Peptic Ulcer".

Speaker

DR. STEPHEN J. STEMPIEN, Beverly Hills, Calif. (By invitation).

2:30 P.M.

12. "Vagotomy for Peptic Ulcer".

Speaker

DR. JOSEPH A. WEINBERG, Long Beach, Calif. (By invitation).

3:00 P.M. Recess to visit the Commercial and Technical Exhibits.

3:30 P.M.

13. "Vitamin U Concentrate Therapy of Peptic Ulcer".

Speaker

DR. GARNETT CHENEY, San Francisco, Calif. (By invitation).

4:00 P.M.

General Discussion.

4:10 P.M.

14. "Restoration of Gastrointestinal Continuity after Total Gastrectomy—Physiologic Aspects".

Speaker

DR. WILLIAM P. MIKKELSEN, Los Angeles, Calif. (By invitation).

4:40 P.M.

Discussion to be opened by:

DR. R. JOHN F. RENSHAW, Santa Ana, Calif. (By invitation).

7:00 P.M.

ANNUAL BANQUET—THE BILTMORE HOTEL, LOS ANGELES, CALIF.

VISIT THE EXHIBITS

FIFTH SESSION

WEDNESDAY MORNING, 14 OCTOBER 1953

ROY UPHAM, M.D., Secretary-General. National Gastroenterological Association, presiding.

9:00 A.M.

15. "X-ray Study of the Small Intestine".

Speaker

DR. LOWELL S. GOIN, Los Angeles, Calif. (By invitation).

9:30 A.M.

General Discussion.

9:40 A.M.

16. "Clinical Applications of Hepatic Radioactivity Surveys".

Speakers

DR. LLOYD A. STIRRETT, Los Angeles, Calif. (By invitation) and DR. ERIC T. YUHL, Los Angeles, Calif. (By invitation).

10:10 A.M.

Discussion to be opened by:

DR. FRANZ K. BAUER, Los Angeles, Calif. (By invitation).

10:20 A.M. Recess to visit the Commercial and Technical Exhibits.

10:50 A.M.

17. "Gastroscopy—A Critical Review of its Clinical Usefulness and Limitations".

Speaker

DR. OLOV A. BLOMQUIST, Los Angeles, Calif. (By invitation).

11:20 A.M.

General Discussion.

11:30 A.M.

18. "Clinical Implications of Mucosal Prolapse Throughout the Alimentary Tract".

Speaker

DR. JACOB LICHSTEIN, Los Angeles, Calif. (By invitation).

12:00 Noon

Discussion to be opened by:

DR. OTTO DEMUTH, Vancouver, B. C. (By invitation).

VISIT THE EXHIBITS

SIXTH SESSION

WEDNESDAY AFTERNOON, 14 OCTOBER 1953

ANTHONY BASSLER, M. D., Honorary President, National Gastroenterological Association, presiding.

2:00 P.M.

19. "Transthoracic Repair of Diaphragmatic Hiatus Hernia Using Fascia Lata".

Speaker

DR. J. NORMAN O'NEILL, Los Angeles, Calif. (By invitation).

2:30 P.M.

General Discussion.

2:40 P.M.

20. "Modern Antigen Therapy in Chronic Idiopathic Diarrhea".

Speakers

DR. JOHN B. McDONALD, Los Angeles, Calif.; DR. HENRY K. OETTING, Los Angeles, Calif. (By invitation); DR. WILLIAM H. DAVIS, Los Angeles, Calif. (By invitation); and DR. KYLE E. TOWNSEND, Los Angeles, Calif. (By invitation).

3:10 P.M.

General Discussion.

3:20 P.M. Recess to visit the Commercial and Technical Exhibits.

3:45 P.M.

21. "Pre- and Postoperative Problems in Gallbladder Surgery".

Speaker

DR. ROY UPHAM, New York, N. Y.

4:15 P.M.

General Discussion.

4:25 P.M.

PANEL DISCUSSION ON LATEST DEVELOPMENTS IN CANCER OF THE GASTROINTESTINAL TRACT

Moderator: DR. WILLIAM C. BOECK, Los Angeles, Calif. (By invitation).

Participants: DR. WILBUR BAILEY, Los Angeles, Calif. (By invitation).

DR. I. SHAPPER, Chicago, Ill.

DR. OWEN H. WANGENSTEEN, Minneapolis, Minn.

VISIT THE EXHIBITS

COURSE IN POSTGRADUATE GASTROENTEROLOGY

SURGICAL COORDINATOR AND CO-CHAIRMAN

OWEN H. WANGENSTEEN, B.A., M.D., Ph.D., Minneapolis, Minn.

MEDICAL COORDINATOR AND CO-CHAIRMAN

I. SNAPPER, M.D., Ph.D., Chicago, Ill.

FIRST SESSION

THURSDAY MORNING, 15 OCTOBER 1953

SIGURD W. JOHNSEN, M.D., President, National Gastroenterological Association, presiding.

9:00 A.M.

Address of Welcome—

DR. SIGURD W. JOHNSEN, Passaic, N. J.

9:15 A.M.

1. "Resection of the Pancreas (Indications, physiological changes and end results)".

Speakers

DR. ELTON L. MOREL, Glendale, Calif.; DR. JACOB JANZEN, Glendale, Calif.
and DR. JAMES CARTER, Glendale, Calif.

9:45 A.M.

2. "Pancreatic Tumors".

Speakers

DR. GEORGE K. WHARTON, Los Angeles, Calif. and DR. LEIGH E. SLOAN,
Los Angeles, Calif.

10:15 A.M. Recess to visit the Commercial and Technical Exhibits.

10:45 A.M.

3. "A Clinical Study of Small Bowel Tumors".

Speakers

DR. E. J. JOERGENSEN, Glendale, Calif.; DR. LAUREL A. WEIBEL, Los Angeles,
Calif. and DR. LOUISA E. KEASBEY, Los Angeles, Calif.

VISIT THE EXHIBITS

11:15 A.M.

4. "The Surgical Management of Hirschsprung's Disease".

Speaker

DR. DAVID STATE, Los Angeles, Calif.

11:45 A.M.

5. "Proctosigmoidoscopic Findings".

Speaker

DR. DAVID MILLER, Los Angeles, Calif.

SECOND SESSION

THURSDAY AFTERNOON, 15 OCTOBER 1953

This entire session will be held at the College of Medical Evangelists, Los Angeles, Calif.

2:30 P.M.

Clinical Session

Moderator:

DR. RUDOLF SCHINDLER.

Participants:—

Medicine:

DR. OLOV A. BLUMQUIST,
DR. CLARENCE R. COLLIER,
DR. MILTON G. CRANE,
DR. CHARLES E. STRACHAN.

Surgery:

DR. ALFRED E. GILBERT,
DR. ARTHUR KUGEL,
DR. ELTON L. MOREL.

Pathology:

DR. ALBERT HIRST.

Roentgenology:

DR. DENIS C. ADLER.

VISIT THE EXHIBITS

THIRD SESSION

FRIDAY MORNING, 16 OCTOBER 1953

This session and all subsequent sessions will again be held at The Biltmore Hotel.

9:00 A.M.

6. "Applied Physiology of the Gastrointestinal Tract".

Speaker

DR. WILLIAM BACHRACH, Los Angeles, Calif.

9:30 A.M.

7. "Lesions of the Oral Mucosa".

Speaker

DR. PAUL D. FOSTER, Los Angeles, Calif.

10:00 A.M. Recess to visit the Commercial and Technical Exhibits. (Exhibits close at Noon).

10:30 A.M.

8. "Diverticulectomy of the Esophagus".

Speaker

DR. CONRAD J. BAUMGARTNER, Beverly Hills, Calif.

11:00 A.M.

9. "Clinical Problems in Carcinoma of the Esophagus".

Speaker

DR. LYMAN A. BREWER, III, Los Angeles, Calif.

11:30 A.M.

10. "The Problem of Advanced Acid-Peptic Esophagitis".

Speakers

DR. J. HOWARD PAYNE, Los Angeles, Calif.; DR. W. RUSSELL SMITH, Los Angeles, Calif and DR. CLARENCE J. BERNE, Los Angeles, Calif.

12:30 P.M.

BUFFET LUNCHEON (Admission by card only)

VISIT THE EXHIBITS

FOURTH SESSION

FRIDAY AFTERNOON, 16 OCTOBER 1953

2:00 P.M.

11. "Integrative Esophagogastroscopy".

Speaker

DR. A. RAY HUFFORD, Grand Rapids, Mich.

2:30 P.M.

12. "Surgical Management of the Peptic Ulcer Problem".

Speaker

DR. CLARENCE JOHN BERNE, Los Angeles, Calif.

3:00 P.M. Recess.

3:15 P.M.

13. "Local Resection of Gastric Ulcer".

Speaker

DR. HERBERT J. MOVIUS, II, Long Beach, Calif.

3:45 P.M.

14. "Gastric Cancer with a Consideration of Total Gastrectomy".

Speaker

DR. JACK MATTHEWS FARRIS, Los Angeles, Calif.

4:15 P.M.

15. "Postgastrectomy and Postanastomotic Syndromes".

Speaker

DR. M. E. STEINBERG, Portland, Oreg.

4:45 P.M.

16. "Malignancy in the Stomach in Atrophic Gastritis and Pernicious Anemia".

Speaker

DR. DAVID NIEMETZ, Los Angeles, Calif., and DR. FRANKLIN B. MEAD, Los Angeles, Calif.

VISIT THE EXHIBITS

FIFTH SESSION

SATURDAY MORNING, 17 OCTOBER 1953

9:00 A.M.

17. "Control of Stomach Pain".

Speaker

DR. DONALD C. BALFOUR, JR., Los Angeles, Calif.

9:30 A.M.

18. "Acute Abdominal Disorders".

Speaker

DR. WILLIAM H. SNYDER, JR., Hollywood, Calif.

10:00 A.M. Recess

10:15 A.M.

19. "Amebiasis in Tuberculosis Patients".

Speaker

DR. A. XERXES ROSSIEN, Kew Gardens, N. Y.

10:45 A.M.

20. "Liver Disease in Ulcerative Colitis".

Speakers

DR. WILLIAM E. MOLLE, Los Angeles, Calif.; DR. JAMES A. HALSTED, Los Angeles, Calif. and DR. LEO KAPLAN, Los Angeles, Calif.

11:15 A.M.

21. "Gastrointestinal Complications of Antibiotic Therapy".

Speaker

DR. SHERMAN MELLINKOFF, Los Angeles, Calif.

VISIT THE EXHIBITS

SIXTH SESSION

SATURDAY AFTERNOON, 17 OCTOBER 1953

2:00 P.M.

22. "Medical Indications for Splenectomy".

Speaker

DR. JOHN S. LAWRENCE, Los Angeles, Calif.

2:30 P.M.

23. "Resection of the Liver".

Speaker

DR. KENNETH C. SAWYER, Denver, Colo.

3:00 P.M. Recess

3:15 P.M.

24. "Peritoneoscopy as a Diagnostic Adjunct in Gastroenterology".

Speaker

DR. ROBERT B. HOPE, Los Angeles, Calif.

3:45 P.M.

25. "The Use of Irradiated Parafins in Diverticulosis".

Speaker

DR. ANTHONY BASSLER, New York, N. Y.

4:15 P.M.

26. "Some Clinical and Historical Aspects of Diseases of the Hepato-biliary Tract".

Speaker

DR. HYMAN I. GOLDSTEIN, Camden, N. J.

VISIT THE EXHIBITS

SCIENTIFIC EXHIBITS

BOOTH S-1 "Modern Antigen Therapy in Chronic Idiopathic Diarrhea".

DRS. JOHN B. McDONALD, Los Angeles, Calif. and DR. KYLE TOWNSEND, Los Angeles, Calif.

BOOTH S-2 "Peptic Ulcer—Treatment with Prantal"

DR. THEODORE S. HEINEKEN, Bloomfield, N. J.

TECHNICAL EXHIBITORS

(Those attending the Convention sessions are urged to take advantage of the time in between the presentation of papers and sessions, to visit the technical exhibits and become acquainted with the many new products and new equipment on display)

AMES COMPANY, INC., Elkhart, Ind. (Booth 25). will present *Apamide*, nonsalicylate, nonbarbiturate, nonnarcotic analgesic—antipyretic. N-acetyl-p-aminophenol, 0.3 gm. is the quick-acting ingredient.

Apromal combines 0.15 gm. N-acetyl-p-aminophenol with 0.15 gm. acetylcarbromal, combining the meritorious qualities of *Apamide* with mild sedation.

THE BORDEN COMPANY, New York, N. Y. (Booth 24). *Mull-Soy*, a product which for seventeen years has been recognized as a beneficial diet food for milk-allergic children and adults, is currently finding favor among physicians in the treatment of patients suffering from gastric ulcer. During the past several years, physicians have noted beneficial effects from *Mull-Soy* in those milk-allergic patients who also suffer from gastric ulcer. The number of ulcer patients benefited in this way seems to indicate a definite relationship between the use of *Mull-Soy* and the dietary treatment of ulcers.

BRISTOL LABORATORIES, New York, N. Y. (Booth 12).

DON BAXTER, INC., Glendale, Calif. (Booth 6), will feature *Calorigen-1000*, the first heat-sterilized, tubal nutrient solution commercially available for nasogastric tubal feeding; *Isolyte* with and without dextrose; *Gastric Electrolyte* and *Duodenal Electrolyte* Solutions with Dextrose; *Hyprotigen* with 0.15 per cent Potassium Chloride. You'll also see the remarkable new Pharmaseal 8-French Plastic Feeding Tube for greater patient comfort; Radiopaque Gastrointestinal Tube; Stomach Irrigation Tube; Expendable Stomach Tube; Plastic Oxygen Catheter; and the Plastic Expendable Extension Tube.

DARWIN LABORATORIES, Los Angeles, Calif. (Booth 9). Their exhibit will feature several specialty products, currently of great interest to the profession.

Of exceptional merit is *Lipo-Hepin* 200, a long acting aqueous heparin requiring only one injection per day regardless of patient weight. This product does not contain an artificial retarding menstruum and may be used intravenously when desired.

Information concerning the use of heparin for the treatment of atherosclerosis will be available on request.

BURTON, PARSONS & COMPANY, Washington, D. C. (Booth 7).

CIBA PHARMACEUTICAL PRODUCTS, INC., Summit, N. J. (Booth 17), will feature *Antrenyl*, a new potent anticholinergic agent with no bitter after-taste, in the management of peptic ulcer and spasm of the gastrointestinal tract. Samples and literature will be available.

VISIT THE EXHIBITS

THE COCA-COLA COMPANY, Atlanta, Ga. (Booth 10). Ice-cold Coca-Cola will be served through the courtesy and cooperation of the Coca-Cola Bottling Company of Los Angeles and the Coca-Cola Company.

DOHO CHEMICAL CORPORATION, New York, N. Y. (Booth 26), is pleased to exhibit *Auralgan*, the ear medication for the relief of pain in Otitis Media and removal of Cerumen; *Rhinalgan*, the nasal decongestant which is free from systemic or circulatory effect and equally safe to use on infants as well as the aged; and the *New Otosmosan*, the effective, nontoxic ear medication which is Fungicidal and Bactericidal (gram negative-gram positive) in the suppurative and aural dermatomycotic ears. Mallon Chemical Corporation, subsidiary of the Doho Chemical Corporation is also featuring *Rectalgan*, the liquid topical anesthesia, also Bactericidal and Fungicidal for control of secondary invaders, particularly recommended for treatment of mold infections (monilia) occurring after antibiotic therapy; also for relief of pain and discomfort in hemorrhoids, pruritus and perineal suturing.

EDER INSTRUMENT COMPANY, Chicago, Ill. (Booth 5), will again exhibit their latest developments in gastroscopic equipment. The latest development, a biopsy tube, should be of great interest to the profession. Also other diagnostic instruments will be exhibited at their booth.

ENCYCLOPAEDIA BRITANNICA, INC., Los Angeles, Calif. (Booth 11). EB's Biggest Revision in a quarter of a Century! The 1953 Edition of Encyclopaedia Britannica is a new milestone in Britannica's 186-year history, representing, as it does, the biggest revision—in a quarter of a century—of what has long been acknowledged as the world's most authoritative reference work. Approximately 3½ million word changes are involved in revisions affecting over 4,000 articles.

THE NATIONAL DRUG COMPANY, Philadelphia, Pa. (Booth 8), pioneer in the clinical application of resin therapy, will feature *Resion*, an intestinal absorbent; *Resinat H-M-B*, a polymine exchange resin with homatropine methylbromide, for the treatment of peptic ulcer; and *Natrinil*, a cation exchange resin for the control of edema. Trained representatives will be in attendance to discuss our resin preparations and other specialties.

WILLIAM H. RORER, INC., Philadelphia, Pa. (Booth 2), cordially invite you to visit their booth where their representatives will be happy to answer any questions regarding *Suspension Maalox* and *Tablet Maalox*. *Maalox Suspension*, the antacid containing colloidal grades of Magnesium Hydroxide and Aluminum Hydroxide provides the patient in peptic ulcer with all the advantages of Aluminum Hydroxide Gel USP, but eliminates the constipation often caused by that drug. Continuous clinical use has demonstrated that it causes quick satisfactory relief of pain and discomfort caused by gastritis.

SANDOZ PHARMACEUTICALS, New York, N. Y. (Booth 22), cordially invite you to visit their display which will feature the following: *Cafegot*—the first effective oral preparation for the treatment of migraine and related headaches; *Bellergal*—a time-tested preparation for use in functional disorders; *Hydergine*—a new approach and new product for hypertension and peripheral vascular diseases. A new handbook listing their products will be available and representatives in attendance will gladly answer any questions about these and other Sandoz products.

SCHENLEY LABORATORIES, INC., Lawrenceburg, Ind. (Booth 3), have an informative exhibit featuring *Titralac Tablets* and *Liquid*, the ideal antacid because it titrates like milk. *Ediol*, oral fat emulsion for quick weight gain. *Sedamyl*, ideal sedative—not a barbiturate. *Sombulex*, for rapid sleep induction. *Vescutum* and *Vescutol*—prevention of degenerative diseases. *Dorbane*, exact chemical laxative for constipation management.

SCHERING CORPORATION, Bloomfield, N. J. (Booth 15). Members of the National Gastroenterological Association and their guests are cordially invited to visit the Schering exhibit where new therapeutic developments will be featured. Schering representatives will be present to welcome you and to discuss with you these products of their manufacture.

VISIT THE EXHIBITS

G. D. SEARLE & CO., Chicago, Ill. (Booth 21), cordially invite you to visit their booth where their representatives will be happy to answer any questions regarding Searle Products of Research. Featured will be *Vallestril*, the new synthetic estrogen for menopausal symptoms; *Pro-Banthine*, the true anticholinergic drug for the treatment of peptic ulcers; and *Dramamine*, for the prevention and active treatment of motion sickness.

E. R. SQUIBB & SONS, Long Island City, N. Y. (Booth 18). New Squibb Products, and new brochures of useful interest to you on products already introduced, will be featured. As in former years, your Squibb representative again, cordially invites you to visit the Squibb booth.

WARNER-CHILCOTT LABORATORIES, New York, N. Y. (Booth 20). Research and sales personnel will welcome an opportunity to discuss several preparations of special interest to gastroenterology. Two of these are *Gelusil*, the drug of choice for many years for nonconstipating acid control in peptic ulcer and *Cellothyl*, a tablet bulking agent for the physiological correction of constipation.

WINTHROP-STEARNES INC., New York, N. Y. (Booth 23), extend a cordial invitation to visit its booth, where representatives will be on hand to serve you. Featured will be *Creamalin*, nonalkaline, nonabsorbable antacid; *Telepaque*, for superior oral cholecystography; *Trimucolan*, triple mucin-antacid; *Diodrast* 35 per cent, for operative and postoperative cholangiography.

NOTES

VISIT THE EXHIBITS

Effectiveness + Convenience

IN THE MANAGEMENT OF CONSTIPATION

In the management of constipation bland bulk helps to reestablish normal elimination. Mucilose represents an especially well suited product because it is of vegetable origin and absorbs 50 times its own weight of water, forming a bland, non-absorbable, non-digestible, soothing gel.

With Mucilose there is the added convenience and ease of adjusting the dosage form to meet the clinical need of the patient.

- 1 **Mucilose Granules Special Formula (with dextrose)**, tins of 4 oz. and 1 lb. Pleasant tasting, crunchy granules.
- 2 **Mucilose Flakes Special Formula (with dextrose)**, tins of 4 oz. and 1 lb. Pleasant tasting, easily dispersed in water or other liquids.
- 3 **Mucilose Flakes Concentrated**, tins of 4 oz. and 1 lb. Sugar free (non-caloric), especially useful for the management of constipation in the diabetic and obese patient.
- 4 **Mucilose Compound Tablets**, bottles of 100 and 1000. Mucilose with methylcellulose. Easy to swallow, convenient to carry.
- 5 **Mucilose with Cascara Granules**, tins of 4 oz. Contain 1 grain of powdered cascara per heaping teaspoonful (5 Gm.). Particularly valuable during transitional treatment of the confirmed user of strong laxatives.

Mucilose should be taken with 1 or 2 glasses of water.

Mucilose®

BLAND BULK HYDROGEL

For Physiologic Bowel Regulation

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SEE OUR EXHIBIT AT BOOTH 23

CONVOCATION CEREMONY

The Convocation Ceremony, at which certificates of affiliation will be presented in person to newly elected Members, Associate Fellows, Fellows and those advanced during the year, will follow the Annual Meeting of the Association at 6:00 P.M. on Monday afternoon, 12 October 1953 at The Biltmore Hotel in Los Angeles, Calif.

Members, their families, guests and friends are invited to attend.

PRESIDENT'S ANNUAL RECEPTION

This year, as has been the custom for the last several years, the President's Annual Reception will be sponsored by Winthrop-Stearns, Inc.

The Reception will be held at 7:30 P.M. on Monday evening, 12 October 1953, at The Biltmore Hotel in Los Angeles.

Members of the Association, their friends, guests and those present with the exhibits are cordially invited to attend.

Admission cards may be obtained *only* at the Convocation Ceremony which precedes the reception.

ANNUAL BANQUET

The Annual Banquet of the National Gastroenterological Association will be held at The Biltmore Hotel in Los Angeles, California on Tuesday evening, 13 October 1953 at 7:00 P.M.

The incoming President, Dr. Sigurd W. Johnsen of Passaic, New Jersey will be formally installed at the banquet.

Tickets for the banquet, at \$10.00 per person, will be available at the Registration desk on the Convention floor.

All reservations must be made by 10:00 A.M., Tuesday, 13 October 1953.

COURSE IN POSTGRADUATE GASTROENTEROLOGY

The Fifth Annual Course in Postgraduate Gastroenterology, given by the National Gastroenterological Association, will be held at The Biltmore Hotel and the College of Medical Evangelists in Los Angeles, Calif. on 15, 16, 17 October 1953.

Again under the personal direction of Dr. Owen H. Wangensteen, Professor and Chairman of the Department of Surgery, University of Minnesota Medical School, co-chairman and surgical coordinator and Dr. I. Snapper, Director of

Medical Education, Cook County Hospital, Chicago, Ill., co-chairman medical coordinator, the Course will be presented by a distinguished faculty from the medical schools in and around Los Angeles.

Admission to the Course sessions will be limited to those who hold matriculation cards indicating that they have paid the registration fee for the Course.

NOMINATING COMMITTEE REPORT

The Nominating Committee of the National Gastroenterological Association consisting of Dr. Felix Cunha, San Francisco, Calif., chairman; Dr. Sigurd W. Johnsen, Passaic, N. J.; Dr. G. Randolph Manning, New York, N. Y.; Dr. E. A. Marshall, Cleveland, Ohio and Dr. William E. Bippus, West Palm Beach, Fla. has submitted the following slate of candidates to be voted upon at the Annual Meeting of the National Gastroenterological Association in October:

Officers

<i>President-Elect</i>	Lynn A. Ferguson, M.D., Grand Rapids, Mich.
<i>1st Vice-President</i>	James T. Nix, M.D., New Orleans, La.
<i>2nd Vice-President</i>	Arthur A. Kirchner, M.D., Los Angeles, Calif.
<i>3rd Vice-President</i>	C. Wilmer Wirts, M.D., Philadelphia, Pa.
<i>4th Vice-President</i>	Frank J. Borrelli, M.D., New York, N. Y.
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In Memoriam

We record with profound sorrow the passing of Dr. Frank H. Lahey, Honorary Fellow of Boston, Mass.

We extend our deepest sympathy to members of the bereaved family.

ABSTRACTS FOR GASTROENTEROLOGISTS

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INTESTINES

ENTEROVESICAL FISTULA—AN ANALYSIS OF 34 CASES: Thomas L. Cottrell, Norris J. Heckel, and Edward M. Miller. *Geriatrics*, (Jan.), 1953.

Enterovesical fistula is a rare condition and ordinarily occurs between the bladder and the sigmoid, less often the small intestines, or pelvic organs.

Four main types are recognized: (1) Congenital—this type is omitted as the author is concerned only with the aged. (2) Traumatic—trauma rarely causes this condition. Foreign bodies swallowed may find their way into the sigmoid and from there penetrate into the bladder. Postoperative trauma may be a very definite factor. X-ray or radium treatments to the cervix or bladder may cause it. (3) Inflammatory—accounts for about 50 per cent of the cases; originates ordinarily in a chronic diverticula of the sigmoid. Other inflammatory conditions may produce it, such as ruptured appendix, with or without abscess formation, acute inflammation of a Meckel's diverticulum or actinomycosis. Men predominate, because in women the pelvic organs tend to avoid the formation of such fistulae. Constipation with bowel flatulence causing increased bowel pressure with subsequent distention and rupture of the bowel wall may cause it. Congenital weakness of the bowel wall at that point may cause it, producing a diverticulum with inflammation and secondarily involve the bladder wall by perforation. (4) Neoplastic—carcinoma of the sigmoid and upper rectum are definite etiologic factors.

Diagnosis is made on the following:

1. History—the three pathognomonic signs are: (a) Passage of air from the urinary bladder, producing a bubbling sensation. (b) Fecal material in the urine—urine

has pus and blood. (c) Passage of urine by rectum, causing irritation of the bowel and diarrhea. This is a most frequent symptom.

2. Symptoms—chills, fever, frequency of urination and high white count.

3. Cystoscopy—is most valuable because opening in the bladder can be clearly seen. Cystogram with 20 per cent Diodrast has in many cases shown evidence of a tract between the bowel and bladder.

4. Barium Enema—has very often demonstrated not only a diverticulitis or a malignancy but actually a fistulous tract.

Treatment consists of: (1) Conservative—to be used only where surgery is inadvisable or unsafe. Use of antibiotics specific for the organism in the urine. Occasionally a pin-point opening may close spontaneously and thus avoid radical surgery. (2) Surgery essentially involves separating the bowel from the bladder wall, closing both openings and resection of the bowel having the diverticulum or carcinoma. The author feels that the safest way is to do the right transverse colostomy first, wait 2-3 weeks and then follow with a resection.

The author then presents 34 cases observed and treated at the Presbyterian Hospital in Chicago during a 16 year period. Males predominated 3-1. Age was 60-70. The greatest number was in the inflammatory group. Fecalurea was present in 56 per cent. Pneumaturia 41 per cent. Conservative treatment was used in 7 cases. In the remaining 29 cases some type of surgery was done.

LOUIS K. MORGANSTEIN

THE ANOSIGMOIDAL INHIBITORY REFLEX: C. Debray, F. Pergola, and J. Aubrion.
Arch. mal. app. digest. 42:5, 1953.

The study, by graph, of the movements of the intestine reveals the existence of a reflex, originating in the anus, which has the effect of interrupting the contractions of the rectum and the sigmoid. We have named it the "anosigmoidal inhibitory reflex". As far as we know, this reflex has never been studied in humans. Youmans and Meek described it in dogs in 1937.

The stimulation of the anus or of the part immediately above it regularly inhibits the contractions of the sigmoid, and in one out of three cases decreases the tonus. The sudden interruption of contractions immediately follows the stimulation of the anus. On an average this lasts from 1 to 3 minutes. Stimulation of the anus for a second time is followed by a further pause in the contractions; but if the stimulation is continued, the contractions start again after a few minutes. The reflexogenic zone is restricted to the sphincter region and just above the sphincter region of the anus. The inhibited region is extensive as we have verified by studying the graphs of the movements of the transverse and descending colons in patients who have undergone resection for cancer.

The motor impulse of this reflex is conducted by the sympathetic adrenergic in-

hibitory fibres. Youmans and Meek have actually discovered that—in dogs—an interruption of contractions can no longer be obtained after sympathectomy. The starting point of the reflex is probably the mucous membrane of the anus, but it is difficult to separate the physiology of the mucous membrane from that of the sphincter muscle.

The physiopathological role of this reflex is as yet uncertain. It is a very special one as the stimulation of the mucous membrane of the anus causes a pause in contractions whilst the stimulation of the remaining part of the digestive mucous membrane causes hyperperistalsis. It is probably involved in the mechanism of continence: besides the contraction of the anal sphincter, the bringing into play of this reflex, by causing recto-sigmoidal atony causes the sensation of the need for evacuation, due to the pressure of the feces on the rectal walls, to disappear.

In pathology it is possible for this reflex to play a part in colonic constipation and inefficient defecation characteristic of which is the disappearance of the sensation of want. Furthermore, anal irritation, as in hemorrhoidal anitis, may cause a reflex atony of the colon and of the rectum thus causing constipation.

PATHOLOGY AND LABORATORY RESEARCH

USE OF DRUGS IN OLDER PEOPLE: Wm. T. Salter. *Geriatrics*, 7:No. 6, (Nov.-Dec.), 1952.

There is no known drug that will rejuvenate the elderly, nor is there a specific against the aging process. Geriatricians accept as normal such things as loss of weight, osteoporosis of bone, atrophy of cartilage, emphysema of the lungs, atrophy of the skin, etc.

The author feels that the judicious use of testosterone propionate, reinforced with estrogen, progesterone or desoxycorticosterone, could be beneficial in combating the mental depression and the other manifold symptoms accompanying the climacteric. It has been definitely established that there is a gradual decline in the output of the 17 ketosteroids and thyroid production with the attendant lessening of the renal function and gastric secretion.

Intensive therapy with any drug should

be avoided as elimination is poor and cumulative action more likely. The enthusiastic use of insulin and epinephrin should be avoided as they may induce angina or a cardiovascular crisis. The same holds true for digitalis. Cincofen is more dangerous, causing *exoxea* and slowing of the circulatory rate. The use of sulfonamides is more dangerous in the old or diseased kidney, causing blocking or crystalline deposits. Histamine is less able to cause a response to gastric acid in a senile gastric mucosa.

Sedatives and hypnotics act more potently on the central nervous system of the aged causing easier habituation and more distressing results. Anesthesia in the aged should be handled with great care and skill. With plenty of oxygen, cyclopropane anesthesia offers one of the best chances

for surgery in the aged. Epinephrine should be avoided due to the cardiac arrhythmias it induces. Ether inhalation is bad, especially in chronic emphysema and bronchiectasis. Spinal anesthesia may produce a critical fall in blood pressure. In combating hemorrhage and shock, care should be used not to overload the heart.

Alcohol seems to be of some benefit in the aged. In anginoid heart disease it dulls substernal pain. It quiets the apprehensive one and leads to a restful nap before dinner.

It may quicken the appetite and even add a few calories where there is a nutritional problem. Although alcohol has a vasodilating effect, it does not materially improve arteriosclerotic ischemia. Its abuse can be very injurious, leading to a greater dependency on it. The addition of Vitamin B and C are desirable.

Avitaminosis is high in the aged. The diet should be high in proteins, Vitamins A, B, C, and calcium and iron.

LOUIS K. MORGANSTEIN

EFFECTS OF INCREASED PROTEIN INTAKE IN OLDER PEOPLE: Wm. B. Kountz, Philip Ackerman, et al. *Geriatrics*, (Feb.), 1953.

High protein diets have been advocated in debility, convalescence and postoperatively. Previous studies in nitrogen balance have indicated that older people require more proteins than younger. In the aged, diets containing .5 gm. protein per Kg. of body weight, was insufficient to maintain N equilibrium, whereas it was enough in the young. Diets containing 1 gm. or more per Kg. of body weight per day over long periods, maintained N equilibrium well, especially when part of the protein was taken in the form of yeast.

In this study observations were made of the influence of a high protein diet on the glucose tolerance test, total and fractional serum protein, on NPN of the plasma and on the B.M.R. Four patients were studied. They were put on 1 gm. protein per Kg. body weight for 135 days, then increased to 1.5 gm. protein per Kg. body weight for the next 75 days. The diet consisted of meat, eggs, milk. Breakfast consisted of 2 eggs,

150-200 gm. meat divided between the other 2 meals, 15 gm. protein from bread, vegetables and desserts with 750 c.c. milk to make up the correct intake level.

The following observations were noted:

1. Glucose tolerance tests—no changes noted before or after high protein diets.

2. The N.P.N. values—were higher than the normal for younger adults, but not out of line from the average elderly subject on a completely free diet.

3. Basal metabolic rate—was done frequently and showed no correlation with the protein intake.

4. Kidney fraction tests—were within normal limits for this age group.

In summarizing the author feels that difficulties may be encountered in keeping elderly people on a high protein diet for too long periods. The increase in N.P.N. suggests that care should be taken in limiting the amount of protein fed to older people.

LOUIS K. MORGANSTEIN

LIVER AND BILIARY TRACT

NEWER RADIOPAQUE MEDIA FOR ORAL CHOLECYSTOGRAPHY: W. G. Scott, and W. A. Simril. *Am. J. Roentgenol.* 69:78, (Jan.), 1953.

The newer cholecystographic radiopaque media, iodoaliphonic acid (priodax), cyclohexane carboxylic acid (monophen), and triiodo-phenyl propanoic acid (telepaque) have made cholecystography a simple, convenient and accurate test of gallbladder function. Of these compounds the newest, telepaque is the only "triiodo" compound with three iodine radicals. The other two are "diiodo" compounds with two radicals. Telepaque contains 15 per cent more iodine than the others. This increased iodine content largely explains why it produces gallbladder shadows of increased density.—For this same reason telepaque can be in-

gested in the morning and satisfactory cholecystograms obtained the same afternoon. It can be administered immediately after the barium meal in the morning and excellent cholecystograms made four hours or six hours later, but this is not recommended as a routine procedure. This compound is recommended for obese patients. In patients weighing 150 lbs. or less the dose can be reduced to two grams (4 tabl.), it is better tolerated. The increased density of telepaque results in the demonstration of the cystic, hepatic and common ducts 5-15 min. after fatty meal.

FRANZ J. LUST

A PRELIMINARY REPORT ON TERIDAX—A NEW CHOLECYSTOGRAPHIC MEDIUM: Robert Shapiro, Radiology, 60:No. 5, 1953.

A new compound has recently been synthesized which obviates the difficulties of Telepaque and Priodax according to this investigation. The structural formula of all these compounds is very closely related. Teridax in contradistinction to Telepaque and like Priodax is excreted almost completely through the kidneys.

This new compound is well tolerated by

patients; side reactions are less pronounced than with Priodax and biliary duct visualization occurs as is seen with Telepaque. Pharmacologically this new compound has low systemic toxicity, is readily absorbed from the intestinal tract and excreted through the kidneys thus causing no confusing shadows in the bowel.

IRVIN DEUTSCH

PANCREAS

AN EVALUATION OF PANCREATIC FUNCTION TESTS: D. A. Dreiling, Sr., N. Y. State J. Med. 53:671-675, (Mar. 15), 1953.

In spite of much clinical and investigative research in the past decade, the diagnosis of diseases of the external pancreatic gland has continued to plague the clinician. A study was made of the secretin response in 172 patients without pancreatic disease, 61 patients with proven pancreatic malignancies, and 95 patients with proved pancreatitis.

Analysis of the various laboratory procedures used in the diagnosis of pancreatic disease lead to the following conclusions: (1) Blood amylase elevations, when present, are of diagnostic significance. No correlations can be made on a quantitative basis. The results of the various so-called provocative blood enzyme tests are indeterminate. (2) Chemical analysis of the stool furnishes information as to the completeness of diges-

tion and absorption but cannot be used as a reliable quantitative index of pancreatic function. (3) The secretin test yields quantitative data concerning the external pancreatic function. Its value in the diagnosis of acute pancreatitis is limited by the rapidity with which the external secretion returns to normal ranges. Pancreatic cancers and chronic pancreatitis can be diagnosed by the characteristic alterations produced in the secretin test responses. In the advanced stages of both diseases, the secretin responses are no longer diagnostically distinct. A combined secretin-pancreozymin test may resolve this difficulty and appears to offer the best type of quantitative procedure for the study of pancreatic secretion and the diagnosis of pancreatic disease.

ARNOLD L. BERGER

BOOK REVIEWS FOR GASTROENTEROLOGISTS

ACCELERATED CONDUCTION—THE WOLFF-PARKINSON-WHITE SYNDROME AND RELATED CONDITIONS: Myron Prinzmetal, M.D., Rexford Kennamer, M.D., Eliot Corday, M.D., John A. Osborne, M.D., Joshua Fields, M.D. and L. Allen Smith, M.D. 110 pages. Grune and Stratton, New York, N. Y., 1952. Price \$4.00.

This is one of the modern medical monographs recently issued by the publishers.

This monograph by Prinzmetal and his associates of the Cedars of Lebanon Hospital, Los Angeles and the University of California Medical School (L. A.), informatively and understandingly present the Wolff-Parkinson-White Syndrome and Related Conditions.

The first comprehensive description of the syndrome was published by Wolff, Parkinson and White in 1930. (*Am. Heart J.* 5: 685, 1930) with a review of 11 cases.

Five scattered cases are on record in the

literature, prior to this report, by Wilson (1915), Wedd (1921), Bain and Hamilton (1926), F. Bach (1928-29) and W. W. Hamburger (1929).

A bibliography of 46 references concludes this little monograph. The authors report their own experiments clearly and concisely. All cardiologists, students of cardiology and electrocardiographers will profit much by the understandingly well written and authoritative presentation of the Wolff-Parkinson-White Syndrome and Related Conditions and its mechanism of production.

GASTROINTESTINAL X-RAY DIAGNOSIS: Max Ritvo, M.D., Assistant Professor of Radiology, Harvard Medical School, Instructor in Radiology, Tufts Medical School, Director, Dept. of Radiology, Boston City Hospital and I. A. Shaffer, M.D., Instructor in Radiology, Harvard Medical School, Instructor in Radiology, Tufts Medical School, Visiting Radiologist, Boston City Hospital. 838 pages with 470 illustrations with 2 in color, extensive references and index. Lea and Febiger, Philadelphia, Pa., 1952. Price \$20.00.

Many textbooks on roentgenology are written and printed, depicting normal and abnormal states of the gastrointestinal tract. However, this splendid volume by Ritvo and Shaffer far surpasses many others.

There are ten chapters and each chapter is complete with ample explanations and illustrations, making easy and comprehensive reading so that the physician may grasp the fundamentals, even though he is not a specialist in gastrointestinal diseases or an expert radiologist.

The authors have taken into consideration the wants of the general practitioner as well as the specialist and describe the effect of drugs upon the various organs. On page 103, the reader will find a discussion on the therapeutic use of atropine, bromides, belladonna, benzedrine, amyl nitrate and nitroglycerine in cardiospasm. On page 104, the side-effects of nitrates are described.

The chapter on the stomach is a masterpiece and should be read thoroughly because the physician will find many suggestions in making a differential diagnosis. On page 177, the authors call attention to the value of gastroscopy as an aid in determining the state of the mucosa. They quote Ruffin and Brown, that overinflation of the

stomach with air during gastroscopy may present a confusing picture as regards the presence of actual gastritis.

Gastrointestinal allergy may simulate many gastrointestinal diseases, particularly ulcer, cholecystitis, pancreatitis, enteritis and colitis and it is difficult to make a definite diagnosis. Here again, Ritvo and Shaffer discuss and suggest methods of differential diagnosis and diets as a means to the end.

On pages 304 and 305, the reader will find detailed description of bleeding from the stomach. Roentgen studies during acute bleeding have now become routine procedures, provided certain contraindications are observed. On page 309, figure 176, intra-luminal filling defects produced by blood in the stomach are shown.

On page 327, duodenitis is discussed, a condition which is often overlooked or entirely ignored. Periduodenal adhesions, duodenal rupture due to external trauma are called to the attention of the physician.

The other chapters are as explanatory and instructive and the reviewer recommends Ritvo and Shaffer's Gastrointestinal X-ray Diagnosis as a valuable addition to the physician's working library.

DIE GESUNDE UND KRANKE WIRBELSAULE IN RONTGENBILD UND KLINIK PATHOLOGISCH—ANATOMISCHE UNTERSUCHUNGEN: von Geh. Med.—Rat. Prof. Dr. Med. Vet. H. C. Georg Schmohl (deceased), für Röntgenkunde und Klinik Bearbeitet von Prof. Dr. Med. Habil. Herbert Junghanns, Oldenburg (Oldb.). Zweite, Wesentlich Erweiterte Auflage. 281 pages, 399 illustrations. Georg Thieme Verlag, Stuttgart, Germany, 1951. Price DM 69.

The first edition of this work by the late Professor Georg Schmohl of Dresden appeared in 1932; he unfortunately died the same year. This improved, enlarged second edition (1951) is the work of Professor Herbert Junghanns of Oldenburg.

The illustrations are excellent and quite informative. The paper is of high quality and the publishers are deserving of high praise for their fine work.

The very exhaustive bibliography of 30 pages (251-281) includes chiefly references

to German literature—comparatively very few English, American, Latin-American and French references!

All German-reading radiologists, orthopedic surgeons and students, physicians, surgeons and teachers interested in disorders of the spine should own a copy of this fine book. Many American and English specialists would be delighted to possess an English translation of this excellent monograph by an expert in this field of the normal and diseased spine.

ATLAS DER PATHOLOGISCHEN ANATOMIE—Eine Sammlung Typischer Krankheitsbilder Der Menschlichen Drüsen: Dr. med. vet. h.c. Robert Rossle emer. ord. Professor und ehemaliger Direktor des Pathologischen Instituts der Universität Berlin am Charité-Krankenhaus und Dr. Med. Kurt Apitz, Weiland ao. Professor und Prosektor des Charité-Krankenhauses. 298 pages, 564 illustrations. Georg Thieme Verlag, Stuttgart, Germany, 1951. Price DM 87.

This beautifully color-illustrated volume on excellent paper is a delight to behold and to read!

Unfortunately, Professor Kurt Apitz, one of the authors, died February 3, 1945 and Professor Rossle dedicated this work to the late Professor Apitz. The authors and the Georg Thieme Verlag deserve congratulations on a fine "piece of work". The reviewer is glad to recommend this highly informative and instructive Atlas of Pathological Anatomy.

The illustrations and descriptions of diseases of the heart and pericardium, blood vessels, bones, spleen, lungs, pleura, esophagus,

stomach, intestines, liver, bladder, kidneys and the central nervous system—brain and cord—and some pathologic conditions of the skin are excellent. A subject index of eleven pages concludes the work.

There are also some illustrations and descriptions of "Weibliche Geschlechtorgane" and "Männliche Geschlechtorgane".

Pathologists, clinicians, surgeons and medical students and residents will find this volume highly instructive. All medical libraries in medical schools and hospitals should have this work readily available for all those who desire to read and learn.

APPLIED PHYSIOLOGY: Samson Wright, M.D., F.R.C.P., John Astor Professor of Physiology, University of London, Middlesex Hospital Medical School, sometime Examiner in Physiology to the Universities of Oxford, London and Leeds, etc., with the Collaboration of Montague Maizels, M.D., F.R.C.P., Professor of Clinical Pathology, University of London, University College Hospital Medical School and John B. Jepson, M.A., B.Sc., D. Ph., A.R.I.C., Senior Lecturer in Biochemistry, Courtauld Institute of Biochemistry, Middlesex Hospital Medical School. 1190 pages, 688 figures. Geoffrey Cumberledge, Oxford University Press, New York, N. Y., 1952. Price \$9.00.

The first edition of this excellent work on "Applied Physiology" by an experienced teacher of physiology appeared in 1926.

This ninth edition is practically a new book, much improved and extended, with an increased number of informative illustrations.

Professor Maizels aided the author in the preparation of the chapters on the "Internal Environment", the "Blood" and "Clinical Pathology". Dr. Jepson prepared the chapter on "Metabolism" and aided in the chapters on "Endocrines" and "Nutrition". Dr. Cyrus Keele helped with the "Endocrines".

and "Reproduction". Mr. W. F. Floyd contributed the section on "Clinical Electroencephalography".

This textbook on "Applied Physiology" is highly recommended as an instructive and

informative work for all premedical and medical students, internes, residents, fellows, junior physicians, surgeons of our hospitals and particularly for the teaching staffs of medical schools.

HERZSCHALLDIAGNOSTIK IN KLINIK UND PRAXIS: Eine Einführung in Den Praktischen Gebrauch Der Herzschallschreibung. von Jorgen Schmidt-Voigt, Dr. Med. Facharzt Für Innere Medizin Chefarzt am Stadt. Krankenhaus Eppstein in Taunus. 116 pages, 33 illustrations. Georg Thieme Verlag, Stuttgart, Germany, 1951. Price DM 9.60.

Dr. Schmidt-Voigt has made a distinct contribution to the advanced studies of cardiologic diagnosis. This little monograph on "Herzschalldiagnostik" ("Cardiac-sound-diagnosis") merits translation into English. Many diagnosticians, cardiologists and students of cardiac physiology who do not read German would profit by studying an (Eng-

lish) early translated edition.

The various "sound-curves", murmurs, *galloprhythm*, pericardial friction, congenital anomalies, Fallot's tetralogy and trilog, etc. are all concisely and informatively presented.

A good bibliography of about 70 references is included.

DIE KRANKHAFTHE BLUTDRUCKSTEIGERUNG: Prof. D. L. Hantschmann, Leitender Chefarzt und Chefarzt der Inneren Abteilung der Städtischen Krankenanstalten Remscheid. 228 pages, 33 illustrations. Georg Thieme Verlag, Stuttgart, Germany, 1952. Price DM 36.

This informative (German) monograph on hypertension "Die hypertonie des Arteriellen Systems"—presents an easily understood and instructive discussion on normal blood pressure, pathologic increases of blood pressure, general and special from the renal, cardiac, nutritional, secretory, and arteriosclerotic angles. "Das phäochromocytom", "Nebennierenrindenadenome", "Morbus cushing", "Eclampsia", ("Eklampsie"), "Essentielle hypertonie", malignant sclerosis, "Die hypertonie im Kindesalter", "Nephri-

tis" and hypertension in lead poisoning are all briefly but adequately discussed. When translated for an English edition, this little monograph can be added to the shelf containing Dr. Arthur M. Master's recent little monographs, Dr. David Aymán's "Arterial hypertension" (1948), "Das phäochromocytom" by Prof. Heinrich Sack (1951), Schmidt-Voigt's "Herzschall diagnostik" (1951). Henry A. Christian's "Bright's disease" (1948) and Professor K. Matthes' "Kreislaufuntersuchungen".

KREISLAUFUNTERSUCHUNGEN AM MENSCHEN MIT FORTLAUFEND REGISTRIERENDEN METHODEN: von K. Matthes, O. Professor Für Innere Medizin, Erlangen. 326 pages, 205 illustrations. Georg Thieme Verlag, Stuttgart, Germany, 1951. Price DM 48.

This volume on studies of the circulation by Professor Matthes discusses the various methods of studying disorders of the cardiovascular system.

The author, an experienced clinician and teacher, has well-considered the numerous problems that the cardiologist, diagnostician and practitioners often have to solve, sometimes with considerable difficulty and, at times, with some doubt as to the accuracy of their findings.

This book, if translated into English, would be a welcome addition to (English) readers who cannot read German textbooks.

There is an excellent bibliography containing 409 references of German publications. Unfortunately, the author omits most of the many valuable references to American, English, French and Latin-American contributions which have so rapidly advanced our increasing knowledge of disturbances of the cardiovascular system. It is indeed to be regretted that so often we find that the German speaking authors of Central Europe have repeatedly ignored, or have failed to consider the publications in the United States, Canada, Mexico, Argentina, Cuba, France and England, etc.

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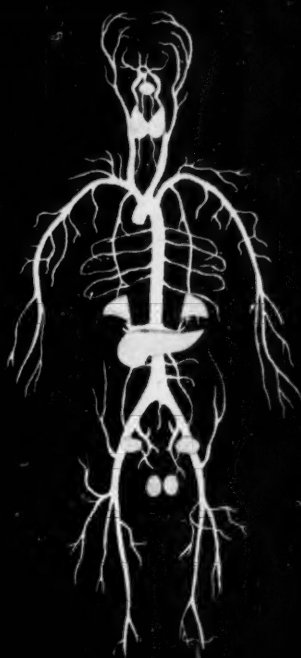
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Estradiol Benzoate, U.S.P., 1 mg. and Testosterone Propionate, U.S.P., in Sesame Oil 20 mg. per cc. In single-dose disposable STERAJECT cartridges and in 10 cc. multiple-dose vials

Estradiol, U.S.P., 1 mg. and Testosterone, U.S.P., 10 mg. per Transmucosal Tablet

Stanolone in Aqueous Suspension 50 mg. per cc.; in 10 cc. multiple-dose vials

*TRADEMARK

PFIZER LABORATORIES *Brooklyn 6, New York*

DIVISION, CHAS. PFIZER & CO., INC.



FELO'RAL®

**A NEW
NON-BARBITURATE
SPASMOLYTIC-SEDATIVE
CHLORAL HYDRATE *plus*
NATURAL BELLADONNA
ALKALOIDS**

FELO'RAL

FELORAL CAPSULES are packaged in moisture-proof strips for their protection; easily carried in purse or pocket.

AVERAGE DOSAGE

Adults: 1, 2 or 3 capsules with water as indicated, at regular intervals, preferably after meals.

Infants: Rectally, as required.

Supplied: Prescription size - 100's

Samples? Of course . . . on your request.

Each PINK and WHITE FELORAL Capsule contains:

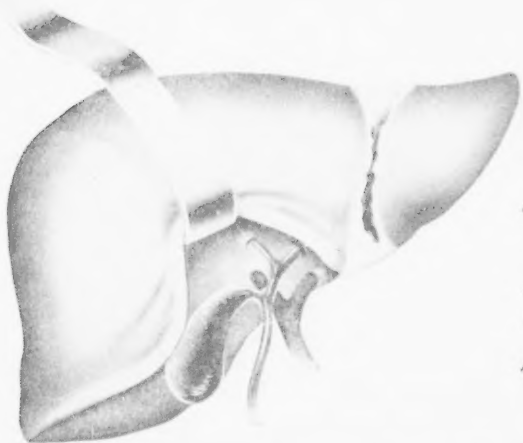
CHLORAL HYDRATE, 3 1/2 gr.	250.0 mg.
BELLADONNA ALKALOIDS, naturally occurring	
HYOSCYAMINE	0.100 mg.
ATROPINE	0.020 mg.
HYOSCINE	0.006 mg.

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Pharmaceuticals

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Originators of CHLORAL HYDRATE in Soft Gelatin Capsules



to restore

*normal
fat
metabolism*

HEPA-DESICOL®

Kapseals®



combined lipotropic and bile therapy

HEPA-DESICOL combines choline, methionine, and inositol with Desicol (desiccated whole fresh bile, Parke-Davis). It is valuable in the treatment of liver dysfunction often accompanying early cirrhosis, alcoholism, diabetes mellitus, malnutrition, obesity, and atherosclerosis.

Lipotropic action of choline, methionine, and inositol is well established; Desicol not only provides additional bile but also stimulates normal bile flow. This dual action of HEPA-DESICOL provides more effective therapy of disturbed fat metabolism.

HEPA-DESICOL Kapseals are supplied in bottles of 100 and 1000.

each Kapsel contains:

dl-Methionine	150 mg.
Choline Bitartrate	200 mg.
Inositol	50 mg.
Desicol®	150 mg.

dosage—Two to four Kapseals three times a day, with or immediately following meals.



Parke, Davis & Company

DETROIT, MICHIGAN

Upjohn

massive
gastroduodenal
bleeding . . .

Gelfoam Powder

Trademark Reg. U. S. Pat. Off.

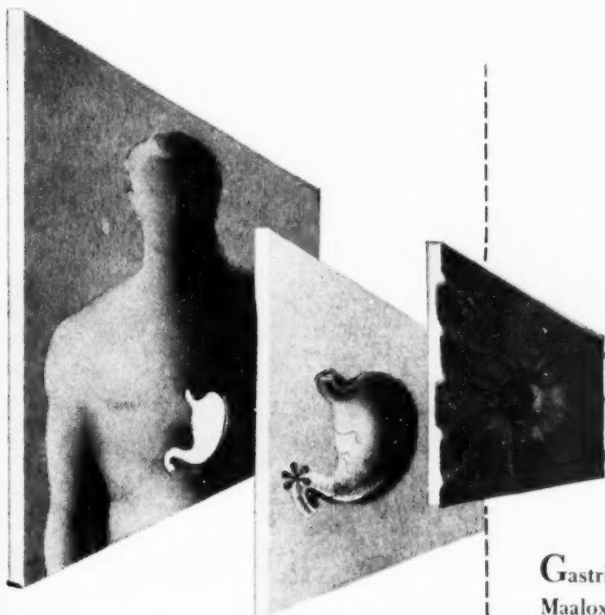
Finely-powdered Gelfoam for
oral administration, with or
without thrombin

Available in 10 Gm. packages

The Upjohn Company, Kalamazoo, Michigan



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maalox[®]

gives ulcer relief

without side effects



Gastric hyperacidity is controlled by Maalox-Rorer without constipation or other side effects commonly encountered with antacids. Relief of pain and epigastric distress is prompt and long-lasting. Available in tablets and liquid form.

Suspension Maalox-Rorer contains the hydroxides of Magnesium and Aluminum in colloidal form. The smooth texture and pleasant flavor make it highly acceptable, even with prolonged use.

Supplied: in 355 cc. (12 fluid ounce) bottles. Also in bottles of 100 tablets. (Each Maalox tablet is equivalent to 1 fluidram of Suspension Maalox.)

Samples will be sent promptly on request.

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Among agents for treating the peptic ulcer patient, AMPHOJEL has earned high priority.

AMPHOJEL is unique in that it combines two distinct aluminum hydroxide gels. One is extremely reactive, and acts quickly to decrease gastric acidity. The demulcent component, relatively nonreactive, combines with gastric mucin to form a viscous, protective coagulum. The combination in AMPHOJEL thus affords two-way protection—it relieves pain and promotes healing.

AMPHOJEL®



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peptic ulcer service
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PHOSPHALJEL®
(Aluminum Phosphate Gel)
—for marginal ulcer



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